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RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES APPROPRIATIONS FOR 1991

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

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PART 7

TESTIMONY OF MEMBERS OF CONGRESS AND OTHER INTERESTED INDIVIDUALS AND ORGANIZATIONS

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RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES APPROPRIATIONS FOR 1991

MONDAY, MARCH 26, 1990.

TESTIMONY OF MEMBERS OF CONGRESS AND OTHER INTERESTED INDIVIDUALS AND ORGANIZATIONS

SOYBEAN CYST NEMATODE RESEARCH

WITNESS

HON. BILL EMERSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

Mr. WHITTEN. The committee will come to order.

Welcome to our honorable colleague, Bill Emerson from Missouri, and his associate.

Mr. EMERSON. Thank you, Mr. Chairman.

I want to thank you all for allowing me to come before this distinguished subcommittee to talk on behalf of continued funding for soybean cyst nematode research. You have all been most helpful in previous years for this funding for a serious problem for soybean producers.

The Delta Area Agricultural Research Center in Portageville, Missouri, has been the premier national facility for extensive research on the soybean cyst nematode. Because of your past help in this matter, helping us get the funds for this project, I know they are aware of the many benefits accruing to soybean farmers as a result of this research.

It has heretofore been a problem that has primarily affected us in the South. Now that problem has spread far beyond.

Presently scientists estimate there are 25 million acres of land in the United States that are infested with this nematode. Nationally, soybean folks tell us it is in the neighborhood of a $600 million problem.

It was in 1989 due to the increase infestation of this soybean nemesis.

As I said, the problems go far beyond the borders of Missouri, Mr. Chairman, you are well aware of the problem in Mississippi. It is a problem in Arkansas, Southern Missouri.

Now scientists are telling us that in Iowa and Illinois and Nebraska even the cyst nematode is the soybean producers' worse problem that they have got to deal with. Production losses now in the northern states exceed what we have experienced in our southern regions.

Soybean yields are continuing to decline due to this pest, and that translates into diminished profits, which is that our farmers and our rural communities can ill afford to lose.

There are some signs of encouragement in sight for the soybean farmers trying to keep with this profit destroying dilemma. Fortunately, that hope lies in the hands of the research capabilities presently available at the Delta Center.

Progress is being made, and much of the progress that has been made in the control of and the eradication of cyst nematodes is the research being conducted at the Delta Center, which this subcommittee and the full committee has so generously supported over the years.

What has been accomplished thus far, it would not have been possible to have accomplished it without the, roughly, $300,000 a year that we have been able to get for research on this vital program. As always, this year the Administration did not include funding for cyst nematodes research and its budget request.

In fact, no Administration has ever requested funding for the program. Fortunately, you have always found a way to transfer some funds from some other accounts to allow us to go forward with this modest effort at the Delta Center. In doing so, great progress has been made.

We have been able to fund the cyst nematode research without increasing the overall agriculture budget.

Present research efforts have not been able to overcome the spread of this yield endangering pest which will threaten many more hundreds of millions and potentially billions of dollars worth of losses in soybean production this year and in the years to come.

For that reason we are on the verge of some significant scientific breakthroughs. I was at the Delta Center last week and last month. I stay in very regular touch with them.

I encourage and invite you, Mr. Chairman, you, John, anyone who would like to come down there, the staff, to see what is being done and what progress is being made. They are on the verge literally of some breakthroughs.

For the last 10 years we have gotten $280, $300,000 every year. We sort of, we have not contained the problem because, obviously, the spread to the northern states.

But it would be an awful lot worse if we had not done what we did. You get one strain of nematode resistant beans.

That works for a little while. Ultimately the cyst nematodes infect that. Now they are really on the verge in some scientific developments that they think will give them, put them ahead of the curve rather than just staying right behind the curve.

It is for that reason that I am more the first time ever asking for $600,000 in funding for this program. We are at a point now where that money can be well utilized and we can get a jump on the problem rather than just staying a little bit behind.

I will repeat. I asked for $300,000 every year. The least we ever got was $280,000. We were awful glad to have gotten that.

We made scarce dollars stretch very far. Now continued, the yield losses that continued with the spread of the pest showed we have got to do more.

We are at that juncture where the scientists tell us if we have more funding, we can really make it count.

Maybe we are getting to the point where we can find the cure and certainly the eradication of the cyst nematode. They say it is crucial to get this funding this next year. Otherwise research efforts have to be reduced.

They are in a position where they could utilize this additional funding. They have staff in place. I hope we could increase this amount this year.

I hope we could do it without increasing the total funding. I know it has to come from somewhere.

We are glad to cooperate in every way possible. If we do come forward with this funding, I think we will be saving a number of farmers from financial ruin in the long run and also saving the Federal Government.

The $600,000 we hope we will be able to have this year, I most sincerely urge you to give this your most favorable consideration.

Mr. WHITTEN. Thank you.

Soybeans have been important for a good while. When I came here soybeans were a hull crop in that you couldn't keep it in the pod. Every fourth year you would have to buy seed. We have seen it grow.

We have been glad to be a party to it. I have tried for years to get soybeans treated as storable commodities. I also know that sometimes when we have embargoed soybean exports, we have encouraged other countries to produce them. There have been a lot of problems.

This committee regularly has asked that soybeans be treated as other storable commodities are.

Again, you speak in terms of money and rightly so. On the other hand, we want to see what you are going to use the money for.

I am going to ask the staff to see what you do with additional funds and look into some of the increases that we have here to see whether we can meet some of the needs.

Mr. EMERSON. Mr. Chairman, you will have my full cooperation.

If you can spring a staff person lose, we would love to have you come down to the Delta Center and let you walk somebody through so you can see what is going on there.

Mr. JOHN T. MYERS. Do you suppose the Lord is telling you that maybe you ought not to raise soybeans?

Mr. EMERSON. I wouldn't want to try to decipher what the Lord's message is now.

[Congressman Emerson's prepared statement follows:]

STATEMENT OF

CONGRESSMAN BILL EMERSON

Mr. Chairman, I wish to thank you for allowing me to come before your Subcommittee to speak on behalf of continued funding for cyst nematode research. Also, I want to thank you, Mrs. Smith, the Ranking Minority Member, and the other members of this Subcommittee for your help and assistance in previous years in funding this vitally important research effort.

As you know, the Delta Area Agricultural Research Center in Portageville, Missouri has been the premier national facility for extensive research on the soybean cyst nematode. Because of your past assistance in securing funding for this project, I know you are aware of the many benefits accruing to soybean farmers as a result of this research. Presently, scientists estimate twenty to twenty-five million acres of land in the United States are infested with the cyst nematode. Nationally, soybean producers lost an estimated 600 million dollars in 1989 due to the increased infestation of this soybean nemesis.

As these numbers show, this problem goes far beyond Missouri's state borders. Scientists in Iowa, Illinois and Nebraska now view the cyst nematode as their soybean grower's worst enemy. Production losses in those northern states now exceed what we have experienced in more southern regions. As you can see, soybean yields are continuing to decline due to this pest and that translates into diminished profits -- something both farmers and rural communities can ill afford to lose.

There are some signs of encouragement in sight for this nation's soybean farmers trying to cope with this profit destroying dilemma. Fortunately, that hope lies in the hands of the research capabilities presently available at the Delta Center. Much of the progress that has been made in the control of and eradication of cyst nematodes is a result of research conducted at the Delta Center. That progress would not have been possible without the nearly 300 thousand dollars the Delta Center has recieved annually to continue its research program.

As you know, funding for cyst nematode research was not included in the Administration's budget request. In fact, the Administration has never requested funding for this program. Fortunately, Congress has always transferred funds from other accounts to allow this vital research at the Delta Center to continue. In doing so, we have been able to fund cyst nematode research without increasing the overall Agriculture budget.

Unfortunately, present research efforts have not been able to overcome the spread of this yield endangering pest which will threaten many more hundreds of millions and potentially billions of dollars worth losses in soybean production this year and years to come. That is why I am seeking 600 thousand dollars in continued funding for this critical program. In previous years, I have sought 300 thousand dollars from your committee; however, yield losses combined with the spread of the pest prove that

additional funding is necessary in order to guarantee both sustained and accelerated progress in the eradication of the cyst nematode for the next fiscal year.

Mr. Chairman, it is my hope that we can once again meet this important need without increasing total spending. If we do as we have in the past, I believe we will be saving a number of farmers from financial ruin in the long run, thus saving the federal government many times the 600 thousand dollars we will hope to spend this year.

I urge the Subcommittee to give its approval to this request, and appreciate your providing me this opportunity to testify.

MONDAY, MARCH 26, 1990.

HIDE AND LEATHER RESEARCH—EASTERN REGIONAL RESEARCH CENTER

WITNESSES

JEROME J. BREITER, PRESIDENT, U.S. HIDE, SKIN AND LEATHER ASSOCIATION

CHARLES S. MYERS, PRESIDENT OF LEATHER INDUSTRIES OF AMERICA, REPRESENTING THE U.S. TANNING INDUSTRY

Mr. WHITTEN. Mr. Breiter and his associate from U.S. Hide, Skin and Leather Association are next.

Mr. BREITER. For the record, I am Jerome J. Breiter.

I am President of the U.S. Hide, Skin and Leather Association. With me is Charles Myers, President of the Leather Industries of America.

We are here to speak today, Mr. Chairman, on behalf of the hide—we are here to speak today to the hide and leather research program at the Eastern Regional Research Center in Philadelphia. With your permission, we will have our statement put into the record and I will summarize for you.

Hide and leather research keeps our product competitive in the global market today. We have been before this committee for several years now, this is our third year, requesting additional funding for those programs.

Through the goodness of the Administration, as the prior witness has said, some of this has been accomplished through a rearrangement of the funds. But, we are here today because we are excited about some of the things that are happening.

We are asking the committee to help us to see that these programs are furthered and brought into fruition through some additional monies for research.

We believe that we are on the threshold of some dramatic breakthroughs in this area and that these areas are going to have a high pay back for the industry.

Basically those programs that are currently underway and which we are very excited about, first of all, alternatives to chrome tanning. Chrome is a very effective but an environmentally, an environmental problem in the industry.

Eastern Regional Research Center now has available to it some computer modeling techniques which we would like to see them used to try to develop new and environmentally safe and cost-effective materials for tanning. They feel that they have the ability to do this now at the research center.

The second one which came as a result of some research which this committee has funded is the enzymatic degradation of tanning solid waste. This process has been proven in the laboratory.

The results in the recycling of chrome containing agents and production of a usable protein byproduct so we are able to not have to dispose of the chromium. We need money to do some pilot plant testing and expansion of this program.

We estimate that this can result in the elimination of some 24,000 metric tons of chrome shavings a year which are currently being disposed of.

Mr. CHARLES MYERS. That was the biggest breakthrough in decades in leather tanning technology. It happened in ERRC last year in one of the laboratories.

It is being field tested in a major tannery in Milwaukee at present. And with some more field testing and just a modicum of laboratory work, we think we will lead the world in recycling this very environmentally sensitive product. It happened at that laboratory, and incredible breakthrough.

Mr. BREITER. We are very proud of that and having modest participation in that.

The last is an alternative hide preservation technique. The ERRC found electronic beam radiation has, looks promising as an alternative to brine curing for hides right now.

We need to evaluate the property of the leather made from hides in this matter and further understand the bacteria on the leather being produced.

Mr. Chairman, in order to maintain our competitiveness on a worldwide market, we must rely on these developments. The domestic markets for leather are either stable or declining.

Exports represent the present and the future for both of our industries. We estimate that the combined value of our industries is about $4 billion annually in sales.

Roughly, half of this amount of sales is ongoing into the export market. We are very proud of that, both of our industries. In order to remain competitive, we must have these research programs.

We need to have the developments continue. We need to advance. We just cannot rely on what has been behind us.

We are requesting a restoration of $800,000 to the ERRC budget, which would put it at a level of about $2 million total. This was a level that we were at in 1980. The programs were cut.

We would ask those funds be partially or fully restored so we are at a level where we can function and produce the products we need for the industry.

We are talking about a total budget of $2 million, which represents.05 percent of the industry sales value.

We don't think that is very much at all.

We thank you for your attention, Mr. Chairman.

Mr. WHITTEN. So many of these foreign countries have a way of keeping our products out, although we are trying to be wide open to everybody.

What is the present situation as far as exports are concerned?

Mr. BREITER. I will speak to it on the hide side.

Mr. WHITTEN. Are you running up against foreign policies that are keeping our products out.

Mr. BREITER. Fortunately or unfortunately, there are no restrictions against imports of the United States hide. There are raw materials.

Most of the countries importing those hides are interested in——

Mr. WHITTEN. We are $40 billion or $50 billion in the red by letting all of the things in here. My own observation is that foreign countries are keeping our stuff out.

Mr. BREITER. We are exporting $1.25 billion worth of hides.

Mr. CHARLES MYERS. We did have problems with Japan, as does the rest of the world with leather. But in the constant four years we have increased our exports from $15 million to $93 million last year going into Japan.

As we call it, the leather curtain.

Mr. WHITTEN. Thank you for your appearance.

Mr. BREITER. Thank you very much, Mr. Chairman.

[Mr. Breiter's prepared statement follows:]

BEFORE THE RURAL DEVELOPMENT, AGRICULTURE AND
RELATED AGENCIES SUBCOMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES, CONGRESS OF THE UNITED STATES

FISCAL YEAR 1991 BUDGET
U.S. DEPARTMENT OF AGRICULTURE

TESTIMONY ON BEHALF OF
U.S. HIDE, SKIN & LEATHER ASSOCIATION
AND
LEATHER INDUSTRIES OF AMERICA

JEROME J. BREITER
PRESIDENT
U.S. HIDE, SKIN AND LEATHER ASSOCIATION

March 26, 1990

My name is Jerome J. Breiter. I am president of the U.S. Hide, Skin and Leather Association, the trade association representing the U.S. Hide and Skin industry. Seated beside me is Charles S. Myers, president of Leather Industries of America, representing the U.S. tanning industry.

We appreciate the opportunity to present this statement to the Committee.

We appear here today representing the combined membership of the U.S. Hide, Skin & Leather Association and the Leather Industries of America. Our message is in support of the research program for hide and leather which is carried out by the Agricultural Research Service's Eastern Regional Research Center in Suburban Philadelphia. The work being done there is vitally important to both of our industries.

We have brought a similar message to this Committee previously and that has been to restore some of the funding for those programs which was reduced several years ago because of a shift in priorities. Ten years ago the hide and leather research program had a budget of $2 million. Currently the funding level is at $1.27 million, up from $1.15 million in 1989. This reduction despite the 1990 modest increase has hindered a program which has been unable to keep pace with the needs of the industry.

And yet Mr. Chairman, we believe we can proudly say that the hide and leather research program has been one of the more successful programs of the ARS. Let us list just a few of the developments that have come from the research done previously at ERRC:

- Gluteraldehyde tanning -- washable shearlings
- Processing to the blue, centrallized near hide sources
- Genetic cause of vertical fiber defect (Hereford)
- Reactive dyes, washable, dry-cleanable (commercialized)
- Comminuted collagen from lime splits (commercialized)
- Activated sludge for tannery effluent treatment
- Pilot scale continuous beamhouse (through unhairing)
- Short-term hide preservation with sulfite/acetic acid
- Study of obstacles of using pigskins for leather
- Determination, elimination of tannery notrosamine source

Some of the current program thrusts of hide and leather research are the following:

- Hide Preservation
  - Use of electron beam irradiation to preserve hides
  - Brine curing studies
    - Brine penetration rates
    - Extraction of hide components by brine
    - Damage to hides by "Halophilic" bacteria
  - Hide damage to sheepskins by automated pulling

- Waste Utilization during Hide Processing
  - Enzymatic process to degrade hide fleshings
  - Use of magnesium sulfate as ammonia-free deliming agent
  - Unhairing with sulfide alternatives
  - Enzymatic process to recover chrome from chrome shavings

- Role of Noncollagenous Components in Hide Structure
  - Binding to collagen
  - Persistence through the leather-making process
  - Effect on mechanical and chemical properties of leather

- Novel Tanning Chemistry
  - Chemical modification for enhanced chrome uptage
  - Use of chrome alternatives
  - Nove synthetic crosslinking agents

We think you will agree that these represent an ambitious and varied program that is really demonstrating how to get the most from the modest funding allocated.

Restoration of $800,000 in research funds will enable us tomove ahead in three areas of enormous practical value.

1. Chrome Tanning Alternatives: Utilizing newly-available computer modeling techniques to define precisely the molecular mechanism of chrome tanning as the basis for empirical studies of new tanning agents (that are ecologically and environmentally compatible).

2. Enzymatic Degradation of Solid Tannery Waste: A breakthrough -- a true discovery -- was made last year on the use of enzymes to render environmentally harmless chrome-bearing solid waste. Much field work lies ahead to perfect this technology for general adoption.

3. Hide Preservation: Gains have been made utilizing electron beam irradiation as an alternative to brine curing. Yet to be determined is the evaluation of such cured hides as a leather raw material.

These top priority, practical objectives can be accomplished by the addition of $800,000 in research funds.

In conclusion we would like to add a word about the industries affected by this request.

Of particular value to our nation's welfare is the success our respective industries -- hide and leather -- have gained in the export arena. Astoundingly, 50% of the $4 billion in shipments is exported, a percentage that has been on the increase in recent years.

Gains in the export column, however, were necessitated because of a long-term erosion of the domestic customer base. The hide industry supplies the tanning industry and the tanning industry provides sheet leather to the manufacturers of finished goods, such as footwear, garments and handbags. Unfortunately, most of the manufacturing of these finished goods now occurs overseas - dictating an export-or perish survival strategy for the affected U.S. industries.

With the demise of our domestic customer base there has been severe contraction within our industries and the major casualty has been the loss of the research and development infrastructure supporting our efforts. We have long come to rely on the services and programs provided by the ARS effort at the Eastern Regional Research Center. In many areas this is the only research mechanism available to our industry that enables us to remain competitive in a global sense.

It is for these reasons that we respectfully request that the funding level be restored to the former $2 million level in order that these important programs continue.

MONDAY, MARCH 26, 1990.

CHILDREN'S NUTRITION CENTER—BAYLOR

WITNESSES

BUFORD NICHOLS, JR., M.D., DIRECTOR, USDA/ARS CHILDREN'S NUTRITION RESEARCH CENTER

D. GAYLE McNUTT, VICE PRESIDENT FOR PUBLIC AFFAIRS, BAYLOR COLLEGE OF MEDICINE

Mr. WHITTEN. We turn now to Dr. Nichols and Dr. McNutt, we are glad to have you here.

Dr. McNUTT. Thank you.

Dr. Nichols will present our testimony.

Dr. NICHOLS. We feel it is a privilege to talk to you each year as we have during the past decade. The ongoing recognition by your subcommittee and of the importance of the Children's Nutrition Research Center and the support you have give us has made it a reality.

We are very pleased to report that the construction of our building was completed. We are now prepared to fully implement the research programs.

The fiscal year 1991 request seeks an additional appropriation to implement the planned program expansion. To fully implement the metabolic research unit which involves the controlled study for extended periods of the diet of pregnant and breast-feeding women and their children.

We have got a figure here that I would like to share with you. This is part of the metabolic research unit.

It includes 12 apartments, two nurseries, a state-of-the-art metabolic kitchen which is illustrated in this figure. this allows us to prepare specific foods in a very detailed and careful manner so that we cans truly measure what is, what are the foods that are eaten in the metabolic unit. This metabolic unit enables families to participate in research activities of the center in a setting that imitates their normal home environment.

The nutrients associated with growth and development are already, are ready to be studied in the metabolic unit. One new direction is we will study the role of the diet in the improved care of low birth weight infants also.

The other picture you see there is of a child with a mask over the mouth. That is a non-invasive way to determine how food is digested and utilized.

Specifically, we look at the food that we, that provides energy to the body. In order to move forward with this technology, we have got to move beyond the measure of the digestibility and utilization of nutrients to study foods.

In order to study food, we need to be able to get our isotope markers into the foods. We now have a greenhouse in which to label plants for use in these investigations with children and their mothers. Working in the food chemistry lab and the greenhouse, we will be able to prepare foods labeled with stable isotopes that allow us to measure digestion utilization not of nutrients like amino acids, but things like corn starch or specifically corn cereals.

We will be able to study the digestion and utilization of the iron in spinach, thee kinds of techniques. I believe this is a conceptual breakthrough because we are moving from the study of specific nutrients to food needs.

I think this work will begin to unite the human nutrition research done in ARS with agriculture production research. With some things like our kitchen, we will be able to track the genetic strains of the foods used and we will be able to trace what their fate is.

We are very honored to be able to have this mission to work within. We thank your committee for the leadership there.

We want you to know that the Texas delegation will have a letter to you very soon supporting our request for increased appropriations.

Mr. WHITTEN. Thank you very much.

You recognize our problems with Gramm-Rudman. The budget and the President have asked us to cut $30 million from this year's expenditures.

Lots of folks say push it back on the states. I don't agree with that, because that is what they did in Colonial days. Each state had to look after itself. It didn't work.

I think it is just a way of getting by with what you wish to do. We do recognize the need to balance the budget. I don't know what we will be able to do.

Thank you for you appearance.

Dr. NICHOLS. Thank you for your support these many years.

[Dr. Nichol's prepared statement follows:]

Testimony of

Buford L. Nichols, Jr., M.D.

Director, USDA/ARS Children's Nutrition Research Center

and

D. Gayle McNutt

Vice President for Public Affairs

Baylor College of Medicine

Before the

Subcommittee on Rural Development, Agriculture and Related Agencies

House Appropriations Committee

Jamie L. Whitten, Chairman

March 26, 1989

Mr. Chairman and members of the Subcommittee:

It is a privilege to appear before you today as we have done each year for the past decade. The ongoing recognition by this Subcommittee of the importance of the work of the Children's Nutrition Research Center and the support you have given now make it a reality.

I am pleased to report to you today that the construction of the CNRC of the U.S. Department of Agriculture's Agricultural Research Service is complete at Baylor College of Medicine in Houston. We are now prepared to fully implement the research programs as directed by Congress and within the scope of the ARS mission.

The completion of the Center's facilities, including the Metabolic Research Unit, has been delivered by the contractor during the current fiscal year and the Fiscal Year 1991 appropriation request includes funds to place this new unit into full operation.

We are proud of the scientific record of the CNRC since its creation in 1978. Baylor College of Medicine operates the Center for the Department of Agriculture through a cooperative agreement. Texas Children's Hospital is also a cooperating institution in the CNRC's programs, which provide a unique blend of medical, educational and agricultural science. These resources focus on developing scientific standards to provide national nutrition guidelines for the healthy physical and mental development of pregnant women, nursing mothers, infants and children through adolescence.

Our ultimate goal is twofold:

1. To assure the best possible health, through sound nutrition, for future generations of Americans.

2. To provide the information to our nation's farmers and ranchers that will allow them to develop the livestock and crop strains that meet the most desirable human nutrition standards.

1991 BUDGET REQUEST

The CNRC's current budget is approximately $10.4 million, which includes the administrative costs of the ARS, the cost of operating the new $55 million building that houses the Center, and the research programs that have been established incrementally over the past dozen years.

The Fiscal Year 1991 request seeks an additional $6 million to implement the planned program expansion:

--$4 million to fully implement the Metabolic Research Unit (MRU), which involves the controlled study for extended periods of the diet of pregnant and breastfeeding women and their children.

--$2 million to establish the Food Bioavailability Unit, which will study the digestion and use of carbon, nitrogen, iron, and calcium in the same research population by utilizing ARS scientists who will operate a food chemistry laboratory and greenhouse.

THE METABOLIC RESEARCH UNIT

The MRU includes 12 apartments, two nurseries, a state-of-the-art metabolic kitchen, and four recreational areas. This unit will enable families to participate in research activities in a setting that imitates their normal environment. Nutrients associated with growth and development will be fully assessed. The role of diet in the improved care of low birthweight infants will also be studied.

THE FOOD BIOAVAILABILITY UNIT

The Food Bioavailability Unit is a new program that will study the digestion and use of the various nutrient elements in foods eaten by pregnant and breastfeeding women and their children. The program will utilize Agricultural Research Service scientists. Working in the food chemistry laboratory and greenhouse, they will develop and grow foods labeled with nonradioactive tracers. This work will unite the study of human nutrient needs and agricultural production research.

BACKGROUND AND MISSION

The Children's Nutrition Research Center is the nation's only federal facility dedicated to investigating the food needs that ensure health in pregnant and breastfeeding women and in children from conception through adolescence.

Research is designed to support the goals of the Department of Agriculture by developing national standards to:

--Evaluate nutritional standards for children, pregnant and nursing women.

--Develop data on how the diet of a pregnant woman affects her health and that of the child she delivers.

--Determine how the mother's nutrition affects her ability to produce milk, the content of that milk, and the health of the child she nurses.

--Assess the relationship between nutrition and physical and mental development.

--Define food needs for healthy growth and development during childhood.

--Establish safe and effective methods for nutrition research.

CURRENT PROGRAMS

The Council of Scientific Advisors, an international panel of recognized leaders in nutrition science, has approved a five-year strategic plan for program development.

These research plans are in accord with the Cooperative Agreement between Baylor College of Medicine and the Agricultural Research Service of the USDA. Currently, research is conducted in three units:

The Metabolic Unit

The Metabolic Research Unit has already established an outreach program that studies the dietary needs of pregnant and breastfeeding women and their children living in their own homes. Scientific data are collected in the home setting of volunteers or through procedures completed at the Center in a single day.

The Stable Isotope Unit

The Stable Isotope Unit enables the study of nutrients in healthy infants and mothers. Stable isotopes are safe, nonradioactive substances that occur naturally in foods. They can be used to trace the path of nutrients in the human body. Investigators in the Stable Isotope Unit have developed ways to determine the nutrients required to produce human milk. Studies are also being conducted in infants and children to determine how the body uses different types of foods.

The Body Composition Unit

Research in the Body Composition Unit is focused on how diet affects growth. Highly specialized techniques are used to assess growth in infants, adolescents, and pregnant and breastfeeding women.

1991 APPROPRIATION REQUEST SUMMARY

Existing budget	$10.4 million
Metabolic Research Unit Activation	$ 4.0 million
Food Bioavailability Unit	$ 2.0 million
Total request	$16.4 million

This concludes our testimony, Mr. Chairman.

Again, I would like to express our appreciation for your support and that of the Subcommittee. Without your faith in this program, its existence would not be possible.

I am also confident, Mr. Chairman, that your commitment to improving the nutrition of future generations will prove well-placed and that the research of the Children's Nutrition Research Center will be a source of pride for all of us.

We would be pleased to answer any questions.

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MONDAY, MARCH 26, 1990.

USDA HUMAN NUTRITION RESEARCH CENTER ON AGING

WITNESS

DR. IRWIN H. ROSENBERG, DIRECTOR, PROFESSOR OF MEDICINE AND NUTRITION, TUFTS UNIVERSITY

Mr. WHITTEN. Dr. Rosenberg of Tufts University is next.

Mr. ROSENBERG. Thank you.

My name is Dr. Irwin Rosenberg. I am a physician.

I am the Director of the USDA Human Nutrition Research Center on Aging at Tufts University.

Like Mr. Nichols, I direct a facility that owes its thanks to this committee for its presence and our ability to direct our attention to the needs of the other end of the developmental cycle from that which Dr. Nichols and his program addresses.

The mission of the HNRC is twofold, to conduct fundamental research on the role of nutrients on the aging process and to help provide relevant information in the development of scientifically sound approaches to meeting the dietary guidelines for people who are already in their older age group.

With the population over age 65 growing at the most rapid of any in the country and consuming a disproportionate amount of our health dollars, their physical well being and health promotion by proper diet is a major national priority. In 1989, the recommended dietary allowances were released by the National Academy of Sciences this past year without addressing the special needs of the elderly.

We hope to use the kind of information that we are establishing in our center to correct that public policy error.

We have completed the nation's only large prospective, placebo controlled clinical trial on the efficacy and risks of calcium supplementation in post-menopausal women and found healthy post-menopausal women with low dietary calcium intakes lose bone density in their spines much more rapidly than those consuming amounts at or above the current RDA levels.

In the next year we will carry out critical studies to determine the vitamin D requirement of the elderly. Vitamin D along with calcium, represent two of the most important nutrients affecting bone health.

We have identified a special chemical in blood which predicts the presence of subclinical vitamin B–12, and folic acid deficiencies in the elderly. Preventing these deficiencies could diminish the risk of cancer, heart disease, and senile vascular insufficiency in the brain.

In the coming year we intend to determine whether supplementation with folic acid, vitamin B–12 or vitamin B–6 can reverse the metabolic risk of heart disease without changing blood fats.

In the next year we plan to begin controlled testing of the effect of long-term diets low in cholesterol and saturated fats (as recommended by the National Cholesterol Education Program) to develop optimal and palatable diets for elderly citizens.

In the next year we plan a community-based epidemiology study to examine whether people who have higher intakes of vitamin C are better protected against the onset of cataracts.

In many of these conditions, including cataracts, the cost of surgery to our population is very great.

Consistent with our requests in the past, we hope to ask for additional funds to bring our program up to full capacity. Our center has now been in its center for six years.

We hope these increases will enable full use of our resources to explore new research questions, particularly in high priority areas associated with genetics, neuro-science, epidemiology and physical function.

In conclusion, I wish to thank once again this committee and you, particularly, Mr. Chairman, for your support for this program over the years.

We feel we are making progress and addressing the health needs of the population.

We hope with the support of you, and Congressman Myers and Congressman Conte, we can continue to do that in the future.

Thank you.

Mr. WHITTEN. Thank you very much.

We do appreciate the job you have done. I don't know what we can do. I am proud of your operation.

[Dr. Rosenberg's prepared statement follows:]

TESTIMONY OF

DR. IRWIN H. ROSENBERG
DIRECTOR
PROFESSOR OF MEDICINE AND NUTRITION

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES
OF THE HOUSE APPROPRIATIONS COMMITTEE

ON BEHALF OF

UNITED STATES DEPARTMENT OF AGRICULTURE
HUMAN NUTRITION RESEARCH CENTER ON AGING
AT TUFTS UNIVERSITY
BOSTON, MASSACHUSETTS

MARCH 26, 1990

USDA HUMAN NUTRITION RESEARCH CENTER ON AGING AT TUFTS UNIVERSITY

FISCAL YEAR 1990 PROGRESS AND FUTURE OPPORTUNITIES
BUDGET REQUIREMENTS FOR FISCAL YEAR 1991

INTRODUCTION

My name is Dr. Irwin Rosenberg and I am the Director of the USDA Human Nutrition Research Center on Aging at Tufts University (HNRC). I would like to share with you today some of the significant accomplishments of our program and our plans for new research thrusts. The mission of the HNRC is really two-fold: (1) to conduct fundamental research on the role of nutrients and diet in the aging process and (2) to help provide relevant information necessary to the development of scientifically sound approaches to nutrient requirements and dietary guidelines for people who are already old. With the population over age 65 growing at the most rapid rate of any in the country and consuming a disproportionate amount of our health dollars, their physical well being and health promotion by proper diet is a major national priority. In 1989, the Recommended Dietary Allowances were released by the National Academy of Sciences without addressing the special needs for the elderly. We are now making progress in addressing that gap in our knowledge.

RECENT RESEARCH ACCOMPLISHMENTS AND NEW STUDIES FOR FY1990

Our exploration of the correlations between nutrition and good health in older adults is resulting in a better understanding of this relationship. For example, some of the recent research accomplishments (*) of the scientists at the HNRC and their plan to follow-up on these findings (>) include:

* We have completed the nation's only large prospective, placebo controlled clinical trial on the efficacy and risks of calcium supplementation in postmenopausal women and found that healthy post-menopausal women with low dietary calcium intakes lose bone density in their spines much more rapidly than those consuming amounts at or over the current RDA levels. Understanding the age-related loss of bone density and developing ways to intervene (without significant adverse effects) in this process are critical to reducing the impact of osteoporosis upon the mortality and morbidity of the 1.3 million geriatric patients with this disease and the expenditure of $3.8 billion to manage them.

> In the next year we will carry out critical studies to determine the vitamin D requirement of elderly. Vitamin D, along with calcium, represent two of the most important nutrients affecting bone health.

* We have discovered that beta-carotene and vitamin E protect skin cells from ultraviolet radiation-induced damage and that the skin of elderly is less capable of synthesizing vitamin D upon sun exposure than younger individuals. Further, skin cells of elderly people have been found to be far more sensitive to the positive differentiation and growth inhibition effects of retinoids (vitamin A compounds). Habitually sun-exposed skin shows paradoxical growth enhancement to retinoic acid. These findings offer an understanding of the role of vitamins in skin function and appearance and provide for new approaches to the prevention of skin cancers like melanoma.

> In the next year we will continue to refine our unique skin culture system which is allowing for the identification of the molecules which promote cell growth and differentiation and the involvement of vitamins and minerals in this process.

* We have identified a marker chemical (homocysteine) in blood which predicts the presence of subclinical vitamin B_{12} and folic acid deficiencies in the elderly. Preventing these deficiencies could diminish the risk of cancer, heart disease, and senile vascular insufficiency in the brain.

> In the coming year we intend to determine wether supplementation with folic acid, vitamin B_{12} or vitamin B_6 can reverse the metabolic risk of heart disease without changing blood fats.

* We have developed new and sensitive methods for the determination of vitamin K in humans and found that vitamin K status may change with age such that a predisposition to hemorrhage appears to exist in older persons. This research will provide important new information on the dietary requirements of vitamin K for the elderly and the allowances for this nutrient which may minimize risk of cardiovascular disease and stroke.

> In the next year we will continue clinical trials directed at establishing dietary requirements for vitamin K in older persons. In addition, we will continue to evaluate the vitamin K content of various foods.

* We are studying the effects of various diets on the proteins which carry cholesterol in the blood of older adults and employed them as sensitive markers for early heart disease. This development of protein and DNA markers for early detection and subsequent intervention and treatment of heart disease should significantly affect the $65 billion medical and disability related costs and diminish the impact of the nation's number one killer of 650,000 Americans each year.

> In the next year we plan to begin controlled testing of the effect of long term diets low in cholesterol and saturated fat (as recommended by the National Cholesterol Education Program) to develop optimal and palatable diets for elder citizens.

* We have developed an animal model (Emory mouse) which mimics the development of human cataract and found that supplemental vitamin C or calorically restricted diets delay the onset and severity of cataract formation.

> In the next year we plan a community-based epidemiology study to examine whether people who have higher intakes of vitamin C are better protected against the onset of cataract.

* We have demonstrated that intestine of old animals is much less responsive to the biological actions of vitamin D (i.e., increased calcium absorption) than tissue from young animals. However, calcium absorption rates were substantially increased when given in conjunction with dietary carbohydrates. This understanding of the cellular mechanisms associated with age-related changes in calcium bioavailability is contributing to the development of practical approaches to enhancing nutrient bioavailability in

older adults.

> In the next year we will be studying zinc and magnesium absorption in elderly subjects to help understand their special mineral requirements.

* We have found that vitamin E plays an important role in the immune system and may act to reverse age-related declines in immune responsiveness. The efficacy of vitamin E intervention is dependent on the type and level of dietary fat with fish oils impairing the ability of vitamin E to enhance immune function. Nutritional manipulation of the immune system presents a practical approach to retarding its functional decline and reducing the rate and severity of infectious disease and cancer in the elderly and their prolonged post-illness recovery periods.

> This year we will extend a clinical trial investigating the long-term effect of vitamin E supplementation in healthy elderly subjects. We will also explore the molecular mechanisms underlying the relationship between diet, aging, and immune response.

* We have discovered that many of the changes in body composition previously thought to be associated with the aging process are more dependent on diet and exercise, e.g., older men respond to weight training and to protein and calorie supplementation with substantial increases in muscle size and strength. Further, exercise training was found to increase the need for dietary protein. Women who have exercised regularly for several years were found to have a greater bone density than sedentary women.

> In the next year we plan to examine and further quantify the effects of strength training and nutritional supplementation (including vitamin D) in the elderly, that segment of the population which may benefit most from this intervention.

* We have found that a loss in the ability to produce stomach acid occurs in a third of the elderly population and results in an interference with the absorption of several vitamins and minerals. These studies suggest that this subpopulation of elderly may be at greater risk of nutritional deficiency and require higher levels of nutrient intake than other groups.

> In the next year we will explore the ways in which lowered stomach acid output affects the bacterial flora in the intestine which can provide many essential nutrients to their host.

PROPOSALS FOR FISCAL YEAR 1991

Last year we reported that an increase of $2,000,000 in Fiscal Year 1990 and 1991 should carry the HNRC's present momentum to 100% capacity and utilization of the research program. Such increases will enable full use of HNRC resources to explore new research questions, particularly in new high priority areas identified by several planning groups, associated with genetics, neuroscience, epidemiology, and physical function. We received $375,00 of new funding in Fiscal Year 1990. To initiate the new program efforts described here and reach 100% of the HNRC's capacity for conducting mission-related research our remaining need for new funding is $2,000,000. This sum could most effectively be converted into productive research efforts

with an allocation of $1,000,000 in Fiscal Year 1991 and $1,000,000 in Fiscal Year 1992. The principal new program efforts reuiring this support are described below:

> We now possess the technology to determine the ways in which differences in genetic makeup affect the nutrient requirements of individuals. Conversely, we are now learning tht the nutrient milieu in each cell may influence how genes express their messages. This year we have already held several conferences with scientists from across the country concerning this relationship between nutrition and genetics. Experiments are now underway which will isolate and sequence the gene controlling the expression of the cholecystokinin receptor, a cell component important both to digestion in the intestine and to neurotransmission in the brain. The efforts in this new research area could allow for the development of nutrient requirements specific to individuals (rather than populations) which could be identified as early as birth. This approach of identifying optimal diets for individuals at the beginning of life could reduce their risk of nutrition-linked diseases at the end of the lifespan and so holds great promise for future applications.

> There is ample reason to believe that some of the decline in cognitive and neurologic function which is so important in the decline of vigor and independence in the elderly is related to nutritional status. We have already begun to examine this phenomenon in population studies but need to recruit to the Center neuroscientists who can lead an examination of the relationship between diet, nutritional status, and neurocognitive function. Additionally, we need to develop a better understanding of eating behavior as it is modified by aging and the factors that control food intake in older adults.

> While a substantial effort has already been undertaken at the HNRC in gaining practical knowledge in nutrition science which can be applied to the maintenance of physical function, strength, and mobility in the elderly, a greater emphasis in this area is being planned. These studies will generate useful, quantitative information on types and levels of physical activity necessary to maintain vigorous musculoskeletal function. Further, contributions from this research approach in nutrition and aging should allow for the determination of optimal body composition and levels of function for different age groups so that nutrient intakes may be designed to achieve these criteria and reduce the risk of developing age-dependent diseases and disorders.

The continuation of the existing program as well as the growth into the new areas described above require new funds. The allocation of these requested new funds is described below.

USDA/HNRCA AT TUFTS UNIVERSITY
FISCAL YEAR 1991
PROJECTED REQUIREMENTS

	FY 1990 BASE	FY 1991 NEW PROGRAMS
Laboratory Research	$5,079,800	$6,079,800
Metabolic Research Unit	1,993,411	1,993,411
Comparative Biology & Medicine	277,642	277,642
Mass Spectrometry Laboratory	58,738	58,738
Biometry	50,365	50,365
Scientific Computing	606,876	606,876
Nutritional Evaluation Laboratory	555,682	555,682
Facility Support	2,174,494	2,174,494
Administration	893,616	893,616
Total to HNRCA	11,690,624	12,690,624
USDA/ARS	2,809,376	2,809,376
Total to Location	$14,500,000	$15,500,000

USDA/HNRCA AT TUFTS UNIVERSITY
FISCAL YEAR 1992
PROJECTED REQUIREMENTS

	FY 1991 PROJECTED BASE	FY 1992 NEW PROGRAMS
Laboratory Research	$6,079,800	$7,079,800
Metabolic Research Unit	1,993,411	1,993,411
Comparative Biology & Medicine	277,642	277,642
Mass Spectrometry Laboratory	58,738	58,738
Biometry	50,365	50,365
Scientific Computing	606,876	606,876
Nutritional Evaluation Laboratory	555,682	555,682
Facility Support	2,174,494	2,174,494
Administration	893,616	893,616
Total to HNRCA	12,690,624	13,690,624
USDA/ARS	2,809,376	2,809,376
Total to Location	$15,500,000	$16,500,000

MONDAY, MARCH 26, 1990.

OAT RESEARCH AND PRODUCTION

WITNESS

PAT HENDERSON, EXECUTIVE DIRECTOR, AMERICAN OAT ASSOCIATION

Mr. WHITTEN. Next is Ms. Pat Henderson, of the American Oat Association.

We are glad to have you here.

Ms. HENDERSON. My name is Pat Henderson, Executive Director of the American Oat Association. We are based in Minneapolis, Minnesota.

We thank you for the opportunity to appear today.

The American Association is concerned about the shortage of domestically grown oats. The membership of the AOA includes 450 representatives from all sectors of the industry.

The association's fundamental goal is to expand U.S. oat research and production to meet the increasing demand for oat products by health conscious Americans.

The AOA has established two legislative committees to convey its concerns and objectives to agricultural policymakers in Washington.

The Farm Policy Committee of the AOA is charged with developing alternative farm policy options to provide adequate oat production incentives to American farmers. The most crucial need at this time is to eliminate the disincentive to oat production under the current target price system and to provide planting flexibility as an incentive for oat production.

The AOA Research Committee is responsible for working with USDA's Agricultural Research Service to support oat research programs to improve the agronomic, nutritional and processing characteristics of U.S. oats.

The committee is also responsible for communicating the program and funding requirements to the U.S. Congress. The AOA Research Committee's 1990 legislative objectives are:

The first objective I will address is full funding of a cereal chemist position at Fargo, North Dakota. This position received partial funding of $100,000 in fiscal year 1990.

We are requesting the additional $100,000 to begin critical oat research exploring alternative milling procedures for oats to produce optimum food quality oats and animal feed.

In particular, the needed scientists would address improvement of quantity, quality and utilization of oat fiber with specific objectives to develop an understanding of oat fiber quality, distribution in the grain and relations of fiber production and improved utilization.

This is a very important issue at the moment given some of the food quality concerns with oat bran which our organizations recognizes.

The second request is for additional funding of $100,000 for oat germplasm enhancement at Aberdeen, Idaho. This program received initial funding of $100,000 in fiscal year 1990. The purpose of germplasm enhancement is to improve the agronomic quality of

the germplasm so that the material is more useful to oat breeders in developing new varieties, critical given the oat production incentives are important to producers.

Soybeans yields are up, corn yields are up. We have to maintain that incentive with oats for production.

The third is the AOA supports additional construction funding for the USDA National Seed Storage Laboratory at Fort Collins, Colorado, at approximately $4 million. This request is due to the critical shortage of storage space for all seed samples.

The fourth, the AOA supports funding of a combined oat and barley ARS research position to be housed in the USDA/ARS cereal crops research laboratory in Madison, Wisconsin. This request is for $200,000 for basic studies on soluble fiber as it relates to human nutrition.

The barley organizations have also included this item in their request for research funding.

We have submitted detail papers for each of the requests.

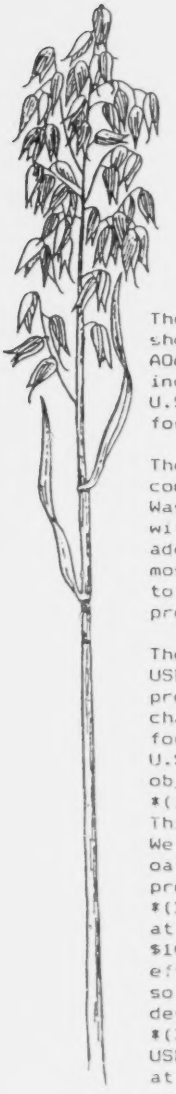
We thank you for your cooperation in the past. It has been very valuable.

Mr. WHITTEN. Thank you very much.

We are proud of what has happened to the dietary value of oats through the years. I hope they have lived up to all the advertising they have had. Glad to have you before us.

Ms. HENDERSON. Thank you.

[Ms. Henderson's prepared statement follows:]



AMERICAN OAT ASSOCIATION
415 SHELARD PARKWAY
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MINNEAPOLIS, MN 55426
(612) 542-9817

STATEMENT OF PAT HENDERSON
AMERICAN OAT ASSOCIATION
BEFORE THE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE,
AND RELATED AGENCIES
U.S. HOUSE OF REPRESENTATIVES
MARCH 26, 1990

The American Oat Association (AOA) is deeply concerned about the shortage of domestically grown oats. The membership of the AOA includes 450 representatives from all sectors of the oat industry. The association's fundamental goal is to expand U.S. oat research and production to meet the increasing demand for oat products by health conscious Americans.

The AOA has established two legislative committees to convey its concerns and objectives to agricultural policymakers in Washington. The Farm Policy Committee of the AOA is charged with developing alternative farm policy options to provide adequate oat production incentives to American farmers. The most crucial need at this time is to eliminate the disincentive to oat production under the current target price system and to provide planting flexibility as an incentive for oat production.

The AOA Research Committee is responsible for working with USDA's Agricultural Research Service to support oat research programs to improve the agronomic, nutritional and processing characteristics of U.S. oats. The Committee is also responsible for communicating the program and funding requirements to the U.S. Congress. The AOA Research Committee's 1990 legislative objectives are:

*(1) Full funding of the Cereal Chemist position at Fargo, ND. This position received partial funding of $100,000 for FY 90. We are requesting an additional $100,000 to begin critical oat research exploring alternative milling procedures to produce optimum human food quality oats and animal feed.

*(2)Additional funding of $100,000 for oat germplasm enhancement at Aberdeen, Idaho. This program received initial funding of $100,000 for FY 90. The purpose of the germplasm enhancement effort is to improve the agronomic qualities of the germplasm so that the material is more useful to oat breeders in developing new varieties.

*(3) The AOA supports additional construction funding for the USDA National Seed Storage Laboratory at Fort Collins, Colorado, at approximately $4 million. This request is due to the critical shortage of storage space for all seed samples.

*(4) The AOA supports funding of a combined oat and barley ARS research position to be housed in the USDA/ARS cereal crops research laboratory in Madison, Wisconsin. This request is for $200,000 for basic studies on soluble fiber as it relates to human nutrition. The barley organizations have also included this item in their request for research funding.

Each of the four research requests is explained in detail in the written testimony submitted for the hearing record.

28-669 O—90——2

January 1990

PROPOSED USDA OAT FIBER QUALITY POSITION AT FARGO, NORTH DAKOTA

The unique nutritional benefits provided by the dietary fiber of oats have recently stimulated increased demand for oat products as human food. The soluble fiber in oats, composed of beta-glucans, has been demonstrated to produce favorable effects in moderating glucose metabolism and lowering blood serum cholesterol levels when included in human diets.

Information concerning the content of soluble fiber in the grain of germplasm accessions in the U.S. oat collection will soon be available. To put this information to use, a scientist with a good cereal chemistry background is needed to coordinate efforts to develop germplasm lines with modified soluble fiber content and distribution which could be used to develop varieties that would produce grain with increased value for both human and animal nutrition. The needed scientist would address improvement of quantity, quality, and utilization of oat fiber with specific objectives to develop an understanding of oat fiber quality, distribution in the grain, regulation of fiber production, inheritance and improved utilization.

The scientist, stationed at North Dakota State University, could cooperate with a breeder in the Department of Crop and Weed Sciences to produce germplasm lines with increased soluble fiber content for improved human nutrition and possibly, lines with lower soluble fiber content to improve feeding value in monogastric animal nutrition. The scientist would be housed in the Department of Cereal Science and Food Technology (CSFT) which would facilitate cooperation with other cereal scientists. The USDA Hard Red Spring Wheat and Durum Quality Laboratory has been housed in CSFT since 1960 and resulted in effective cooperation among scientists. Facilities for milling evaluations and instrumentation necessary for carbohydrate biochemical studies are available in CSFT. This cooperation would facilitate milling evaluations of lines with modified soluble fiber content to determine their utility in production of milling fractions enriched for soluble fiber and permit monitoring fiber quality in the modified lines. Using these facilities, the scientist could obtain information relative to soluble fiber quality and quantity in milling products to develop soluble fiber standards for product labeling. Use of the various milling fractions could be evaluated for production of food products.

Nutritionists in the Department of Animal and Range Sciences (ARS) could cooperate in conducting feeding trials to determine the feeding value of lines with modified soluble fiber content in monogastric and ruminant nutrition. Laboratories well-equipped for nutritional analysis are available in ARS. The value of nutritionally modified lines could be evaluated in the formulation of feeds produced in a commercial scale feed mill soon to be constructed.

The addition of a cereal chemist to coordinate the development and evaluation of oat germplasm lines modified for soluble fiber content and to gain a better understanding of the chemical composition of oat fiber should lead to increased utilization of oats in more specialized areas of human and animal nutrition. This work should provide a more readily available source of high quality soluble fiber to meet needs of U.S. human nutrition.

February, 1990

Oat Germplasm Enhancement Program
Aberdeen, Idaho

The U.S. Department of Agriculture's Agricultural Research Service recently completed the construction of the National Small Grains Germplasm Research Facility at Aberdeen, Idaho. The primary mission of the new facility is to provide secure storage for the National Small Grain Collection (NSGC), numbering in excess of 110,000 accessions, and other small grains germplasm. In addition, the staff is responsible for conducting research concerned with the acquisition, maintenance, evaluation, and enhancement of these genetic resources. Genetic enhancement of small grains germplasm, one of the most important research functions at the location, will be attained through a variety of plant breeding strategies and state-of-the-art biotechnology.

The Oat Crop Advisory Committee, representing the oat research community in the United States, first prepared a National Plan for Oat Germplasm Enhancement in 1983, with a revised version prepared in January, 1987. In the plan, the oat research community documented the need for a coordinated national effort in oat germplasm enhancement concerned with efficiency of production; reduction of losses due to lodging; protection from devastating diseases, such as crown rust and yellow dwarf; and nutritional quality, particularly dietary fiber and protein. The published plan called for coordination of this effort at Aberdeen, Idaho.

Coordination of this national effort by the staff of the National Small Grains Germplasm Research Facility is appropriate, since the new facility permits the location to play an expanded role in small grains research as well as research coordination on a national basis. Aberdeen has a long history of regional and national involvement in oat research, dating back to the early 1900's. The relatively disease free, irrigated environment is ideally suited to the production of oats, with some of the highest recorded oat yields in the U.S. being obtained at Aberdeen. An important ARS staff nucleus already exists at Aberdeen (five positions), presently committed full or part-time to oat research programs in the new facility.

Additional funds to the location would only be required for support staff specifically involved in an expanded oat research program, one time equipment purchases, and operational/coordination costs. We view this program as an opportunity for Aberdeen to more fully realize its potential as an ARS focal point for small grains research and also as an opportunity to directly benefit or enhance oat production in Idaho and other western states. The latter may come at a particularly critical time, as major firms involved in oat processing and marketing are taking an expanded look at the production potential of oats in Idaho and in other non-traditional oats producing states. The expanded interest in oats presents an opportunity for an established crop to play a new role in the agriculture of Idaho and other western states.

The staff at Aberdeen would specifically be involved in coordination of the national effort, including allocation of ARS funds to cooperating locations. In addition, Aberdeen could be utilized as a location for the increase of segregating populations to be selected and evaluated in a diversity of environments outside of Idaho, intercrossing of selected parents in a national program and, because of its favorable field environment, as a location for evaluation of yield potential and quality components. Recent staff additions and laboratories available in the new facility will also permit the location to participate in state-of-the-art oat gene mapping research as well as research concerned with new approaches to gene transfer.

January 1990

STATUS OF THE NATIONAL SEED STORAGE LABORATORY, FORT COLLINS, COLORADO

The FY88 Federal Budget included $1 million to plan and design the expansion of the National Seed Storage Laboratory (NSSL) at Fort Collins, Colorado. The contract for the planning and design was awarded to Merrick and Company of Denver, Colorado in December 1988 and they immediately began work. Merrick and Company was instructed by the Agricultural Research Service to design the NSSL expansion with the expectation that $11 million in construction funds would be appropriated. However, the FY89 and FY90 appropriations were only $2.75 and $5.5 million, respectively, for a total of $8.25 million. With the delay in funding, the cost of the NSSL expansion is now estimated to be $12.25 million because of inflation and changes in the local construction situation. Hence, ARS has requested the remaining $4 million in the FY91 budget. The 95 percent design will be submitted to ARS by Merrick later this month.

The NSSL Planning and Construction schedule has been delayed and is now as follows:

Final Design	5/90
Issue Solicitation for construction	10/90
Award Contract for construction	12/90
Complete Construction	12/92

Our conventional seed storage vaults are expected to be filled to normal capacity within the next 6 months, and then we will have to store on movable carts in the aisles. Because of the disadvantages of this type of storage, we have constructed a small, temporary addition that will hold 16 cryotanks for cryogenic storage. We plan to store all new accessions and regenerated accessions which have seed the size of wheat and smaller only in cryotanks. However, all large seeded species will have to be stored in the aisles. We are hopeful that these strategies will allow us to continue to receive new materials until our new facility is constructed, but completion of the funding for the NSSL expansion in FY91 is critical.

January 1990

PROPOSED POSITION DESCRIPTION
RESEARCH ON NUTRITIONAL QUALITY OF OAT AND BARLEY FIBER
CEREAL CROPS RESEARCH UNIT, AGRICULTURAL RESEARCH SERVICE
U. S. DEPARTMENT OF AGRICULTURE, MADISON, WISCONSIN

A Research Chemist is needed to do research on the synthesis and physicochemical properties of oat and barley fiber as related to human nutrition. The unique properties of the mixed-linked beta-glucans, found in high concentration in oats and barley, on lowering LDL-cholesterol, a high risk factor in heart disease, are now becoming well documented. The mechanism of their action and the pathway and regulation of their synthesis in the plants remains to be elucidated. The proposed scientist would study the physicochemical properties of beta-glucans in oats and barley to determine characteristics important for efficacy. He/she would collaborate closely with Dr. Judith Marlett in the University of Wisconsin Nutritional Sciences Department who is using oat bran as a model to study fiber effects on the human upper gastrointestinal tract. In collaboration with Dr. David Peterson and Dr. Ronald Skadsen of the Cereal Crops Research Unit, he/she will study the physiology and biochemistry of beta-glucan synthesis and degradation in oats and barley. This scientist will form an integral part of an ARS team aimed at enhancing oats for beta-glucan. This effort consists of germplasm evaluation at Madison and Aberdeen, Idaho (Dr. Darrell Wesenberg) and a more detailed investigation of selected lines at Albany, California (Dr. Robin Saunders, Dr. Antionette Betschart).

The initial focus of the proposed position will be to investigate the primary and secondary structure of oat endosperm beta-glucan by the use of specific enzyme degradations, HPLC, GC-MS, and NMR. Differences between oat and barley beta-glucan will be determined, to account for the greater solubility of the former. The relationship between the beta-glucans and other endosperm cell wall components will be determined. Methods for large scale preparations of specific beta-glucan fractions will be developed to provide adequate material for feeding studies with model systems and humans.

The results of these studies will define the essential properties of the oat and barley fiber that are important for human nutrition. Also, they will assist plant breeders in developing superior genotypes. For barley, this may mean developing separate varieties for food use, as high beta-glucan in malt is disadvantageous for brewing.

The Cereal Crops Research Unit has adequate laboratory space for an additional scientist, and some shared facilities are available on the University of Wisconsin Campus (NMR, GC-MS). The position would need to be funded for at least $200,000, preferably with an initial start-up package for equipment.

MONDAY, MARCH 26, 1990.

PLANT BIOSCIENCE COMPLEX—RUTGERS

WITNESSES

T. ALEXANDER POND, ACTING PRESIDENT, RUTGERS STATE UNIVERSITY, NEW JERSEY

DARYL LUND, INTERIM EXECUTIVE DEAN OF AGRICULTURE AND NATURAL RESOURCES, INTERIM DEAN OF COOK COLLEGE

ARTHUR R. BROWN, JR. SECRETARY OF AGRICULTURE, NEW JERSEY DEPARTMENT OF AGRICULTURE

ROGER WYSE, INTERIM DIRECTOR OF THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION, AND INTERIM DEAN OF RESEARCH FOR COOK COLLEGE

RAYMOND BLEW, PRESIDENT, CENTERTON NURSERY

JOHN GERWIG, ASSOCIATE DEAN OF EXTENSION

Mr. WHITTEN. Dr. Alexander Pond and her group are next.

Dr. Pond, we are glad to hear from you.

Mr. POND. I am very pleased to be here, sir.

I would like to introduce my colleagues here.

To your right is Mr. Raymond Blew, who is the President of the Centerton Nursery, a past President of the New Jersey Board of Agriculture and a long-time member of the Board of Managers of our Agriculture Experiment Station.

The Honorable Arthur R. Brown, the Secretary of the Department of Agriculture for the State of New Jersey; Dr. Daryl Lund, the Executive Dean of Agriculture and Natural Resources and also Dean of Cook College in Rutgers University. Dr. John Gerwig is the Director of Cooperative Extension Services in New Jersey.

Dr. Roger Wyse is Dean for Research and Director of the New Jersey Agriculture Experiment Station.

We are very pleased to have this opportunity to praise and testify in behalf of the U.S. Department of Agriculture program which provides matching funds for construction of agricultural facilities at American Universities.

This program continues a great tradition of the Federal Government assuming an appropriate role in a federal-state-industry-university partnership to support our agricultural economy, a role that began with the Morrill Land Grant Act of 1862.

Rutgers now seeks matching funds for construction of a Plant Bioscience Complex under this program. During the last thee years this committee has appropriated almost $400,000 for the study and planning of the facility which is currently in its final design stage.

Mr. Chairman, we are extremely grateful for your strong vote of confidence in developing the project thus far.

The sole purpose of this facility is agriculture; all space in the building will be used for teaching, research and public service activities for New Jersey and United States agriculture.

The state and the university have authorized $27 million towards construction of the $37 million first phase of the Plant Bioscience Complex. The university has committed an additional $10 million in ancillary facilities such as greenhouses and containment facilities for genetically engineered plants.

We are now in need of the $10 million federal matching component so that the actual construction of the facility can proceed in a timely manner, and to ensure that the momentum so far generated for New Jersey agriculture and the State's Agricultural Experiment Station will not be lost.

The programs of the New Jersey Agricultural Experiment Station support the state's $15 billion agriculture and food industry, an industry that is strong and viable, but like agriculture throughout the United States, is facing serious challenges.

These challenges result in large part from urbanization and the associated pressures of competition for natural and human resources, the proximity of agriculture to often incompatible neighbors, and growing public concern over the impact of intensive agriculture on a fragile ecosystem. Although these are problems common to all agriculture, in New Jersey, the most urbanized state in the nation, we experience them sooner and more intensely.

Our responses can lead the way for others.

If these challenges are not adequately addressed, they will ultimately result in the deterioration, if not the demise, of agriculture in our state.

I know that this committee understands the value of maintaining the diversity of the nation's agricultural production systems, and the importance of having healthy agricultural programs in each state.

To meet these challenges, the New Jersey Agricultural Experiment Station has taken the lead in developing a strategic master plan called Vision 21. Its goal is no less than to achieve premier status for Rutgers and its Agricultural Experiment Station among the nation's land grant institutions. We cannot afford second best because what is at stake is the preservation of agricultural production near the nation's largest market, strengthening important food processing and packaging industries, the protection of our fragile coastline and the quality of our environment, proper management of enormous toxic and hazardous waste problem and harnessing new technologies including biotechnology to these ends.

The plan has been in place for just over three years, and I can proudly report progress showing the clear commitment of our region, our state and our university.

The New York/New Jersey Port Authority, in support of our marine industry, has provided $13 million towards a $21 million marine science center.

New Jersey voters recently approved a $350 million Jobs, Education and Competitiveness Bond issue in support of higher education. The bond passed by the highest vote margin in the history of the state, provides over $40 million in support of the Agricultural Experiment Station.

In the last three years, direct state appropriations in support of the New Jersey Agricultural Experiment Station have increased by $3.1 million—a 19 percent gain.

During that same period the New Jersey Commission on Science and Technology has provided $8 million in new operating funds and $10 million in capital construction funds in support of four advanced technology centers operating under the umbrella of the Agricultural Experiment Station.

These are centers in food science, agricultural biotechnology, food technical extension, and fisheries technical extension.

Rutgers, through its Fund for Distinction, has provided $27 million in support of the other capital building program at the Experiment Station. In addition, it has provided working budget increases of $1.7 million to Cook College, and over $8 million in support of start-up costs for new faculty and new academic facilities.

The university has also hired six world class scholars as part of its Excellence Program and located them at the New Jersey Agricultural Experiment Station.

New Jersey's food production industry also has begun to fund the station, by providing $1 million in grant funding for our Center for Advanced Food Technology and by generating more than $750,000 in support of the center's annual operating budget through membership fees.

Thus, over $102 million for capital needs and $10 million in new operating funds have been generated in support of "Vision 21."

We are grateful to this committee through its study and planning grants for being such an important partner in these efforts. It is now time to build on these efforts by moving on the construction of the Plant Bioscience Complex—the cornerstone of our capital and program plans.

This building underpins our philosophy that we must integrate the latest technologies with traditional approaches to solve the problems facing modern production agriculture and the environment.

The building will contain state-of-the-art research laboratories, a research library, teaching classrooms and laboratories, and attached greenhouses. Associated with the center will be a branch facility in southern New Jersey for biological risk assessment, critically important for the testing of engineered plants and microorganisms.

With this fully developed complex we will be able to integrate basic and applied research with extension activities to better ensure that agriculture in the Northwest remains profitable and environmentally sound. Thank you for your consideration. My colleagues and I from the state, the university, and the agricultural community would be pleased to respond to your questions.

Mr. WHITTEN. Thank you very much.

All of us on this subcommittee are on other subcommittees such as Public Works. For example, Mr. Traxler is also on HUD. I have been on the Defense Subcommittee twice as long as any other Member on the committee. So we have these other interests here, but we have retained our position here because we consider agriculture basic to our economy and our well-being.

But, we are in trouble. We have large budget cuts recommended. The increases are for the personnel, the supervisors, many of whom don't have much agricultural background. I don't know what the answer is. It kind of reflects public opinion, in my judgment.

In the average land grant college, the agricultural school gets smaller and smaller, and gets less and less important. I know of many instances where the presidents of the land grant colleges weren't even asked about their agriculture stand. Three hundred thousand farmers have gone broke.

Seventy million acres of farm land lay idle. Now going a step further, because my fears have been right so far as the effect on the farmer is concerned, I will tell you what is happening to the country.

You can't let your biggest industry go down, as we have. We just owe a public debt of $3 trillion, that is all.

We are constantly in a fight over agriculture's importance. The budget we have now drastically cuts the farm programs.

The money is requested for those folks who do anything except farm. They may be exporting and receive money for exporting and call it enhancement.

So, we have got a real serious situation. I have had folks discuss your situation, as to whether in your own State some of your interests are in other directions rather than agriculture.

Your Congressman and Members of our committee are interested in helping you. What I am talking about is not condemning you. I am talking about a national situation.

We have stayed on this committee, and there is not much hoopla about it, but we believe it is basic. I am glad to have you here. We are proud of having gone along in the past.

We have got a national situation, and I hope you can help to get this corrected.

Mr. POND. We will be anxious to help in any way we can.

Mr. WHITTEN. What you have there is the same situation that exists everywhere. This is not to pinpoint Rutgers. You can talk about soil conservation and all these various programs, but they center around the land grant colleges——

Mr. POND. We are proud at Rutgers to have upward curves on most of the vital signs for the agriculture college. The enrollment is strong, the quality of the students is very strong.

Mr. WHITTEN. Yes.

Mr. POND. I think the state, though, very much shares this problem of competition and difficulty of balancing interests——

Mr. WHITTEN. Big cities went down in the past because they didn't know where their strength came from. When you study the fall of Rome, they became dependent on imports.

They started off giving food stamps, after that they gave them wheat, after that they gave them bread. In some of our states they are giving money on an experimental basis. I won't call the name of the states. It wasn't mine. We are doing that with Puerto Rico, as I understand it.

Our responsibility is very diverse. On this subcommittee we are trying our best to look after agriculture, and thereby look after the country.

Mr. POND. I think the State of New Jersey is showing a determined effort to retain its balance and commitment.

Perhaps Secretary Brown might say something.

Mr. BROWN. One thing, Mr. Chairman, going back to New Jersey, we are a small state. The net income from agriculture products has increased 25 percent in the last six years.

It shows that, you know, the farm community is out there and is really working hard.

Mr. WHITTEN. You are not overcharging anybody, are you?

Mr. BROWN. No, but we want to keep on growing, and that is the thing.

Mr. WHITTEN. How about your volume?

Mr. BROWN. Doing great.

Mr. WHITTEN. Don't say that to the budget bureau. They would say we have to push it back on the states.

Thank you very much for your appearance.

[Dr. Ford's prepared statement follows:]

Congressional Testimony for T. Alexander Pond

Mr. Chairman:

I am T. Alexander Pond, Acting President of Rutgers, the State University of New Jersey and I am here today to testify on behalf of the United States Department of Agriculture program which provides matching funds for construction of agricultural facilities at American universities. This program continues a great tradition of the federal government assuming an appropriate role in a federal-state-industry-university partnership to support our agricultural economy, a role that has existed since the Morrill Land Grant Act of 1862.

Rutgers now seeks matching funds for construction of a Plant Bioscience complex under this program. During the last three years this Committee has appropriated almost $400,000 for the study and planning of the facility which is currently in its final design stage. Mr. Chairman, we are extremely grateful for your strong vote of confidence in developing the project thus far.

The sole purpose of this facility is agriculture; all space in the building will be used for teaching, research and public service activities for New Jersey and United States agriculture.

The state and the university have authorized $27 million towards construction of the $37 million first phase of the Plant Bioscience complex. The university has committed an additional $10 million in ancillary facilities such as greenhouses and containment facilities for genetically engineered plants. We are now in need of the $10 million federal matching component so that the actual construction of the facility can proceed in a timely manner, and

to ensure that the momentum so far generated for New Jersey agriculture and the State's Agricultural Experiment Station will not be lost.

The programs of the New Jersey Agricultural Experiment Station support the state's $15 billion agriculture and food industry, an industry that is strong and viable, but like agriculture throughout the United States, is facing serious challenges. These challenges result in large part from urbanization and the associated pressures of competition for natural and human resources, the proximity of agriculture to often incompatible neighbors, and growing public concern over the impact of intensive agriculture on a fragile ecosystem. Although these are problems common to all agriculture, in New Jersey, the most urbanized state in the nation, we experience them sooner and more intensely. Our responses can lead the way for others.

If these challenges are not adequately addressed, they will ultimately result in the deterioration, if not the demise, of agriculture in our state. I am certain that this Committee understands the value of maintaining the diversity of the nation's agricultural production systems, and the importance of having healthy agricultural programs in each state.

To meet these challenges, the New Jersey Agricultural Experiment Station has taken the lead in developing a strategic master plan called Vision 21. Its goal is no less than to achieve premier status for Rutgers and its Agricultural Experiment Station among the nation's land grant institutions. We cannot afford second best because what's at stake is the preservation of

agriculture production near the nation's largest market, strengthening important food processing and packaging industries, the protection of our fragile coastline and the quality of our environment, proper management of our enormous toxic and hazardous waste problem and harnessing new technologies including biotechnology to these ends.

Vision 21 is an appropriately aggressive plan. It calls for major capital resources to improve our research and teaching facilities, for a $27 million increase in our annual operating budget, and for the establishment of advanced technology centers. To succeed, we need to forge partnerships between public and private sectors, and state and federal funding sources.

The plan has been in place for just over three years, and I can proudly report progress showing the clear commitment of our region, our state and our university.

The New York/New Jersey Port Authority, in support of our marine industry, has provided $13 million towards a $21 million marine science center.

New Jersey voters recently approved a $350 million Jobs, Education, and Competitiveness Bond issue in support of higher education. The bond passed by the highest vote margin in the history of the state, provides over $40 million in support of the Agricultural Experiment Station.

In the last three years, direct state appropriations in support of the New Jersey Agricultural Experiment Station have increased by $3.1 million - a 19 percent gain.

During that same period the New Jersey Commission on Science

and Technology has provided $8 million in new operating funds and $10 million in capital construction funds in support of four advanced technology centers operating under the umbrella of the New Jersey Agricultural Experiment Station. These are centers in food science, agricultural biotechnology, food technical extension, and fisheries technical extension.

Rutgers, through its Fund for Distinction, has provided $27 million in support of the capital building program at the Experiment Station. In addition, it has provided working budget increases of $1.7 million to Cook College, and over $8 million in support of start-up costs for new faculty and new academic facilities. The university has also hired six world class scholars as part of its Excellence Program and located them at the New Jersey Agricultural Experiment Station.

New Jersey's food production industry also has begun to fund the station, by providing $1 million in grant funding for our Center for Advanced Food Technology and by generating more than $750,000 in support of the center's annual operating budget through membership fees.

Thus, over $102 million for our capital needs and over $10 million in new operating funds have been generated in support of the Agricultural Experiment Station and its strategic plan, Vision 21. By any reasonable measure, these contributions provide the strongest possible evidence of commitment by the university, the state and the region to our land grant mission and responsibilities.

We are grateful to this Committee through its study and

planning grants for being such an important partner in these efforts. It is now time to build on these efforts by moving on the construction of the Plant Bioscience Complex -- the cornerstone of our capital and program plans. This building underpins our philosophy that we must integrate the latest technologies with traditional approaches to solve the problems facing modern production agriculture and the environment.

This $75 million, 280,000 square foot complex when fully developed will allow us to appropriately house the Center for Agricultural Molecular Biology, a high-tech center consisting of sixteen world class scientists and their support staffs under the direction of Dr. Peter Day, a world renowned agricultural biotechnologist and geneticist; and it will also allow us to coordinate the center with the academic departments of Plant Pathology, Horticulture and Crop Science, Entomology and Plant Bioscience, by housing them together in a single facility.

The building will contain state-of-the-art research laboratories, a research library, teaching classrooms and laboratories, and attached greenhouses. Associated with the center will be a branch facility in southern New Jersey for biological risk assessment, critically important for the testing of engineered plants and microorganisms.

With this fully developed complex we will be able to integrate basic and applied research with extension activities to better ensure that agriculture in the Northeast remains profitable and environmentally sound. It also allows us to provide training for undergraduate and graduate students in plant biology to meet

the growing demand for such scientists, who we anticipate will be in short supply.

We have $27 million in hand towards the construction of the $37 million first phase of the complex. Although we plan eventually to ask the Federal government for an additional $27 million to match our existing commitments, we request $10 million in FY 1991 in support of Phase 1. This is the vital first step towards the achievement of our goal.

Thank you for your consideration. My colleagues and I from the state, the university, and the agricultural community would be pleased to respond to your questions.

REMARKS FOR SUBMISSION
TO THE
RURAL DEVELOPMENT, AGRICULTURE
AND RELATED AGENCIES
HOUSE SUBCOMMITTEE ON APPROPRIATIONS

ON BEHALF OF THE
NEW JERSEY DEPARTMENT OF AGRICULTURE

ARTHUR R. BROWN, JR., SECRETARY

MARCH 26, 1990

As the Secretary of the New Jersey Department of Agriculture, I, Arthur R. Brown, Jr., am pleased to provide comments to the Rural Development, Agriculture and related agencies subcommittee on Appropriations on the proposed Plant Bioscience complex at the Agricultural Experiment Station, Rutgers University. My remarks are based on personal experience as a county extension agent for twelve years and as the Secretary of Agriculture for nearly eight years.

The New Jersey Agricultural Experiment Station has long served the farming community by transfering basic research into practical field application. This tradition of service to farmers has gained a new momentum with the strategic master plan known as Vision 21. Under the direction of this plan, the state and the University have increased their commitment to the AES and the state's $15 billion agriculture and food industry. The state and the University have authorized $27 million towards the first phase of construction of the Plant Bioscience complex. The allocation of $10 million in federal matching funds will allow this vital project to proceed in a timely fashion and allow AES to continue on its path of excellence.

New Jersey agriculture is a diverse industry that offers significant challenges to those serving our farmers. Our farmland base consists of 880,000 acres with roughly 8,300 farms for an average per farm of 106 acres. Most of these farms are small family-owned operations that raise a variety of crops. In fact, New Jersey boasts some 150 different crops, ranging from grains, fruits and vegetables to greenhouse crops. The nursery industry which includes greenhouse, nursery plants and turf ranks as the number one agricultural sector in the state with production on the farm valued at $220,000 million. This tremendous diversity on relatively small acreages requires innovation to meet the daily demands caused by plant pest, disease and cultural problems. The AES has helped to meet these challenges as evidenced by the economic vitality of New Jersey agriculture which has one of the highest gross income return per acre. In fact, many states have looked to the same high value crops raised by our farmers to improve the economic profile on their agricultural sector.

The construction of the Plant Bioscience complex will allow our state to continue to be a leader in the production of horticultural crops. New Jersey ranks in the top ten states in the production of blueberries, eggplant, escarole, potatoes, asparagas, cranberries, spinach, peaches, peppers, tomatoes, snap beans and nursery products. The expanded teaching, research and public service activities afforded by the Plant Bioscience complex will assist in the future productivity and success of our farmers.

Farming in an urban state has the inherit benefit of proximity to the marketplace yet the challenge of competition for natural resources. This competition includes such basic elements to farming as land and water resources. The national trend toward alternative agriculture systems which seeks to lessen the impact on these natural resources presents significant challenges to highly intensive crop production systems such as are used by our farmers.

The New Jersey AES recognized this trend early and has been a forerunner in developing management systems that maximize production while lessening the impact of the our natural resources. These include such programs as integrated pest management which has reduced pesticide applications, plant breeding which has selected for increased insect and pest resistance and trickle irrigation which more effectively utilizes water resources.

The construction of the Plant Bioscience complex offers the introduction and expansion of programs that benefit farmers and all New Jersey residents. In addition, the Center for Agricultural Molecular Biology which will be part of this complex when fully developed, will contribute to meeting the challenges of the future by augmenting existing plant breeding programs.

The New Jersey Agricultural Experiment Station has a tradition of outstanding service to agriculture. The allocation of $10 million in federal funds to the Plant Bioscience facility will allow this tradition to continue to rise to the needs of agriculture into the twenty-first century.

I appreciate the opportunity to provide comment on this vital project.

MONDAY, MARCH 26, 1990.

POTATO RESEARCH

WITNESSES

BOB WALTHER, VICE PRESIDENT, GOVERNMENTAL RELATIONS, NATIONAL POTATO COUNCIL

RON WALKER, EXECUTIVE DIRECTOR, NATIONAL POTATO COUNCIL

Mr. TRAXLER [presiding]. Bob Walther and Ron Walker, from the Potato Council, two very distinguished and fine gentlemen, especially the gentleman from Michigan, my constituent.

We want to welcome you.

We will, of course, put your entire statement in the record.

You may proceed.

Mr. WALTHER. Thank you.

Good afternoon. My name is Bob Walther. I am a potato grower from Michigan.

I have got a family operation there. I farm with three brothers and grow about 1,800 acres of potatoes.

I am currently Vice President of Governmental Relations with the National Potato Council, which represents 12,000 potato growers from 38 states.

In 1984, the National Potato Council and the USDA and the ARS got together and sent out questionnaires to farmers, their nine best interests in problems that we had in the potato industry.

It has worked very well. Every year we have the funding in December. We sit down with Dr. Brooks at the ARS, and there is four growers from across the country evaluate the proposals as they come in from the professors and the different colleges.

We think it is an excellent working relation, that we get the growers' perspective into it. Dr. Brooks gets it down in a layman's language which we can use as growers.

We feel it is an excellent tool for us together. We are looking forward to continually working with ARS and Dr. Brooks. They use our funding wisely.

As you know, as potato growers, we are a non-subsidized crop. We are also deeply involved in the environmental issues and concerns about ground water, chemical safety.

We believe that the future of this research could help us. Less dependent on chemicals and pest approaches.

Mr. WHITTEN. Do you want to go back to that tin can we were talking about yesterday, kerosine and stick?

Mr. WALTHER. We don't want to get that far back.

We appreciate——

Mr. WHITTEN. Does anybody in the audience remember?

The pickle guys know about potatoes, too.

Mr. WALTHER. The proposals that you had funded in the past, we appreciate it. We think we are getting extremely good use out of them.

There will be a seminar in Denver this spring with all the researchers there. It will be attended by a lot of the farmers around the country. Research money is coming to the farmers.

We also had one a year ago on early diagnose in Ohio. We had extremely good results from that.

Marketing. We feel we came a ways on marketing.

We need more input on marketing. We need more research. Some of our products we are using, we know they are under attacked. The potato beetle a few years ago was always in the East.

Now it is heading for the West. Idaho has problems. But with our research money, we know now the cycle of the potato beetle. We know when we see two or three in the field, we are not out there spraying.

We let them—research tells them how much we can let them eat before we spray them. The potato beetles don't seem to, they build a resistance against spray. The least we spray them, the better.

We are also looking for new funding, if we can, in 1991, on potato aphids and potato beetle. We would also like to start up some of our new projects that we are looking for, variety development.

We think that would be the answer to all of them. It is a long ways off. We need funding for everything.

But with the wide species in potatoes we have, 150 of them, there is a lot of genes and cross breeding we can do. We come up with characteristics we don't like, but we like some of the things we can do with them as far as frost resistance, drought resistance.

Some of them have resistance to the insects. We think with the cross breeding and germplasm and biotech, there is a lot of room there for them. This is probably our answer, but it is down the road.

Soil is another, one other new one that we could sue some room in. We think that with groundwater problems, that if we know with research exactly how much fertilizer to put on, what amounts we should, we are looking into seminars to check the saturation or the loss of nitrogen on different varieties.

Engineering, agricultural engineering on potatoes, potato storage, as you know, a lot of potatoes are stored nine, ten months out of the year. We could use new instruments.

The physiological life of the potato within the bin can be determined and how it survives would help us save on engineering and input costs there.

The funds that we have had in the past, we deeply appreciate. We think we used them very wisely. We would appreciate all the funding in the future.

If there are any questions, I will be happy to answer.

Mr. WHITTEN. Thank you very much.

We are proud of our efforts here. The plentiful food supply in this country is something we can be very, very proud of.

Thank you very much.

[Mr. Walther's prepared statement follows:]

BEFORE THE SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
OF THE HOUSE COMMITTEE ON APPROPRIATIONS

THE NATIONAL POTATO RESEARCH PROPOSAL

STATEMENT OF THE NATIONAL POTATO COUNCIL

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Submitted: March 26, 1990

SUMMARY OF REQUEST

The National Potato Council (NPC), representing the nation's 12,000 domestic potato producers in thirty-eight states on legislative and regulatory affairs, requests continued research funding for ring rot disease, early dying disease, marketing, aphids and potato beetles. For Fiscal Year 1991, the NPC requests the balance of funding for marketing ($1,400,000), aphids ($400,000) and potato beetle research ($1,500,000), as well as the following new funding for the remaining proposal projects: weeds - $1,100,000; varietal development - $800,000; soils - $610,000; and agricultural engineering - $237,000.

BEFORE THE SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
OF THE HOUSE COMMITTEE ON APPROPRIATIONS

THE NATIONAL POTATO RESEARCH PROPOSAL

STATEMENT OF THE NATIONAL POTATO COUNCIL

Good morning Mr. Chairman and members of the Subcommittee. My name is Bob Walther. I am a potato farmer from Michigan and current Vice President for Government Relations for the National Potato Council (NPC). Last year, Past President Michael Cranney from Idaho testified before this Subcommittee regarding funding for the National Potato Research Proposal. On behalf of the Council, we thank you for your assistance in obtaining funding for part of the Proposal in Fiscal Years 1988, 1989 and 1990 and we look forward to working with you to expand the funding in Fiscal Year 1991.

The National Potato Council (NPC) is a national trade association representing approximately 12,000 potato growers in thirty-eight (38) states. Our growers produce both seed potatoes and potatoes for consumption in a variety of forms. Annual production during the decade 1977 to 1986 averaged 352,185,000 hundredweight with a value of $1,632,306,000. Total value is substantially increased through processing. The potato crop clearly has a positive impact on the U.S. economy.

The potato is the most popular of all vegetables grown in the United States. Annual per capita consumption is 123.4 pounds, up from 107 pounds in 1962, and is increasing due to the advent of new products and heightened public awareness of the potato's excellent nutritional value. Per capita consumption of processed potatoes increased dramatically from 58.5 pounds to 76.4 pounds. Potatoes are considered a stable consumer commodity and an integral, delicious component of the American diet.

The potato crop has been traditionally controlled by supply and demand in a free market. Government support programs such as price-guarantees and acreage set asides have not been necessary. However, like any other major commodity, potato growers recognize, in order to remain a viable and competitive industry, we must constantly strive to improve production efficiency and market quality. Through carefully planned and executed research, we believe we can continue to offer an excellent product and remain a viable U.S. agricultural industry.

As you will recall, the National Potato Research Proposal was the culmination of an intensive effort begun in 1984 between the NPC and the U.S. Department of Agriculture's (USDA) Agricultural Research Service (ARS) to identify national research issues of concern to the potato industry. During the Fiscal Year 1988 budget process, based on these identifiable research needs, the National Potato Research Proposal received initial funding for the top three of nine priority research projects as follows: ring rot disease ($500,000); early dying disease ($350,000); and marketing ($350,000).

During the Fiscal Year 1989 appropriations cycle, the NPC presented to you and your Subcommittee a request to build on the funding base that had been established in Fiscal Year 1988. Due in large part to your leadership, Mr. Chairman, and the support and interest of all the members of the Subcommittee, Congress approved increased research funding for marketing at a level of $250,000 and provided initial research funding for aphids and potato beetles at the level of $200,000 each. The industry is well aware of your assistance in obtaining this funding, and we deeply appreciate the efforts of the Subcommittee, particularly in light of the budgetary difficulties you have had to face.

In the Fiscal Year 1990 appropriations cycle the ARS received additional funding for national potato research priorities for aphids ($200,000) and potato beetle research ($300,000).

For 1991 the NPC urges the appropriation of funds for marketing ($1,400,000) for aphids ($400,000) for potato beetle research ($1,500,000) as well as new start up funding for the remaining national proposal projects: weeds - $1,000,000; varietal development - $800,000; soils - $610,000; and agricultural engineering - $237,000.

It is important to note that representatives of the NPC have held several extensive meetings with ARS officials, the most recent in December of 1989, to discuss the distribution of Fiscal Year 1990 funding. The NPC is particularly pleased with the tremendous efforts put forth by ARS to ensure that the research is conducted in the most thorough and expeditious manner. The NPC looks forward to continuing its close partnership with ARS to maximize the use of these important funds.

We would like to mention once again the differentiation between regional research priorities and those priorities designed to help the potato industry on a national level. Variations in regional areas exist and are being addressed on the local level. While there is ARS funding directed to these problems that should be maintained, we are here to discuss, separately, the national nine-part proposal. Further, it should be noted the NPC has stressed the coordination of regional and national projects in order to eliminate duplication of effort or scarce resources.

The nine projects are deemed to be the most essential national research projects to improve potato production throughout the nation. For example, research would be conducted on diseases which affect the industry's ability to promote exports and reduce market losses, thereby ultimately benefiting the domestic consumer. Further, the National Potato Council believes these research proposals will enhance the overall marketable production of potatoes, therefore benefiting the grower and consumer without reliance upon costly federal production subsidies.

The NPC has become deeply involved in environmental issues, including concerns over groundwater and chemical safety. We feel that our growers make every attempt to apply such chemicals safely and well within Environmental Protection Agency requirements. However, we anticipate further restrictions on the use of chemicals and even the loss of some existing products. For example, the Colorado Potato Beetle has become an increasingly troublesome pest in western production areas and is spreading rapidly. Research is therefore even more critical given the rapid spread of this pest and the concerns over chemical use. It may even be possible to overcome our dependence on chemicals through plant breeding and use to genetic engineering approaches.

Each of the nine proposals was outlined in detail, including recommendations concerning the objectives of the research and suggested funding levels, and was submitted to your Subcommittee during the Fiscal Year 1988 cycle. The programs and priorities were identical for Fiscal Year 1989 and 1990 and will remain the same for Fiscal Year 1991.

The NPC will continue to work closely with USDA to oversee this research and will report periodically to the Congress on the progress of the research. We sincerely thank your Subcommittee for its generous support of this vitally important research. I would be happy to answer any questions you might have.

MONDAY, MARCH 26, 1990.

VEGETABLE CROPS RESEARCH

WITNESSES

JACK HOBSON, AUNT JANE FOODS
CURTISS CATES, ADDIS CATES COMPANY, INC.
DONALD SWANSON, SWANSON PICKLE COMPANY, INC.
ARTHUR OSHESFSKY, GREEN BAY FOOD CO.
WILLIAM TEMPLE, VLASIC FOODS, INC.
RICHARD HENTSCHEL, PICKLE PACKERS, INTERNATIONAL
RICHARD WALKER, PARAMORE FOODS

Mr. WHITTEN. We will now hear from Mr. Hobson, and panel of the Pickle Packers International.

Mr. HOBSON. I would like to introduce Richard Hentschel, the Executive Vice President of the Pickle Packers International.

And Richard Walker with Paramore Foods, from Louisville, Kentucky. We will also have gentlemen with us today representing Georgia and also Wisconsin and North Carolina.

Mr. WHITTEN. We will be glad to hear from you.

Mr. HOBSON. May I say that we do appreciate your support each year.

Not only do we need it, but the country does, too.

Mr. Chairman, Pickle Packers International thanks you for allowing them time to come to express their concern of ongoing research programs at the ARS/USDA laboratories at North Carolina State and the University of Wisconsin. Our organization is made up of many different sizes of companies and these companies participate in their own local areas in the funding of research of vegetable crops which we mention in our written testimony.

These projects are taking place at many institutions across the nation, including Michigan State University, the University of Arkansas, Ohio State University, Clemson, Texas A&M, Washington State University, the University of Maryland, to name just a few.

While we are funding these many institutions both as private companies and as ad hoc groups cooperating with teams of scientists from many disciplines, trying to solve our individual and common interest problems, we still find that there are those projects which are larger than we can fund by ourselves.

Thus we ask for your consideration of increased funding for two main laboratories that are working on the problems stated in our written testimony entered today.

We believe that through the funding of the laboratory of North Carolina State we may finally turn the corner on how to limit the problems of salt disposal from our brine rank yards as well as come up with new pickled products which will please the palates of the American public.

In Wisconsin we hope to make a breakthrough that will both produce new high producing hybrids of vegetables, and at the same time make these new hybrids more nourishing.

We have come before you for many years requesting for, and thanking you for your support of different projects which we have felt were worthwhile to our industry, to our growers, for the gener-

al public, and in the end to all the related industries that are involved in the production of the products of our industry. We again take this opportunity to thank you.

Both the grower and the processors are having great difficult in keeping up with, and cooperating with all the different fed, state, and local agency regulations impacting on their ability to grow and process this nations food supply. Many of these regulations are direct results of gross misinformation.

The margins of profits for both growers and processors are being squeezed because of the large amount of capital spending needed to be in compliance with these regulations, many of which are subject to change without notice, allowing these regulations, many of which are subject to change without notice, allowing us less discretionary funds which would be used for research.

We do want to assure you that the companies involved in this part of vegetable industry are doing all that we can to assure a safe and wholesome food supply for the peoples of our nation.

We remain committed to our support of the efforts of ARS/USDA in their many projects with the realization that what they are accomplishing now will be seen in the years to come by our children and grandchildren.

We again thank you for your courtesy for allowing us to enter this testimony.

Mr. WHITTEN. Thank you very much.

We have got such a diverse group with some degree of regulation where one group doesn't always know what the other is doing. Frequently they pass it without any idea of whether it will be enforced or not.

Mr. HOBSON. I think they pass each other at midnight lots of times.

Mr. WHITTEN. We have a problem here now. The Delaney amendment flatly says you have to have zero tolerance without anything added. As long as that is true, you operate by sufferance.

Mr. HOBSON. Somebody made the statement the other day that if you took what was considered a pure glass of water, you would find over a million toxic chemicals in that pure glass of water. That is ridiculous.

Mr. WHITTEN. When you add to that that the record shows you can now measure one part per trillion. There is no such thing as zero. Outside of that, we have not got any problems.

Mr. HOBSON. We thank you again for allowing us to appear.

Mr. WHITTEN. Where did the pickle come from?

What are its origins?

Mr. HOBSON. It is mentioned in the Bible.

China basically. It has been around well over 4,000 years.

[Mr. Hobson's prepared statement follows:]

A STATEMENT OF CONCERN FOR SUSTAINED
AND INCREASED RESEARCH BY THE
AGRICULTURAL RESEARCH SERVICE/USDA
AND in particular for the:

U. S. Food Fermentation Laboratory, ARS/USDA
Department of Food Science
North Carolina State University
Raleigh, North Carolina

Research Leader:
Dr. Henry P. Fleming

Principal Witness: Mr. Jack Hobson, Aunt Jane Foods, Croswell, Michigan.
For the Field Research and Research and Development Committee,
Pickle Packers International, Inc.

ON THE OCCASION OF Hearing March 26, 1990 U. S. House Appropriations Subcommittee on Agriculture, Rural Development and Related Agencies.

Thank you for allowing us to present this statement of concern. Pickle packers International, Inc. is a not-for-profit trade corporation representing the makers of pickled vegetables including, cucumbers, peppers, onions, carrots, cauliflower, tomatoes, okra, green beans and other vegetables. The organization has voluntary participation representing more than 90 percent of the tonnage in North America and with members in 18 nations.

Your Committee's leadership in maintaining the ARS/USDA as a vital resource for the overall farming community is gratefully acknowledged. We believe that a value added higher technology approach will help in the long term solution to the problems of the farm industry and provide a very stable base for yet unknown demands of future generations.

The vegetables we supply to consumers along with other horticultural crops are called "minor". However, in total, horticultural crops constitute a large component of our diet. Many small to medium sized growing and processing operations are involved. These crops are small compared to the commodity crops, but they provide a useful diversity to the overall farm income picture. More than 750,000 tons of pickled cucumbers are consumed each year in the U.S.A. alone. The processing of pickled onions, peppers, cauliflower and those other so-called minor horticultural crops provide cash income to growers and jobs in processing plants and related supply industries such as sugar, vinegar, spices, caps, boxes, processing equipment,etc.

The pickled vegetable industry strongly supports and encourages your Committee in its work of maintaining and guiding the Agricultural Research Service. You have kindly indulged our group allowing us to show our support each year for nearly twenty years.

Within the framework of the ARS/USDA we ask for your consideration of some special needs for the pickled vegetable industry occasioned by the stringent new demands of the Environmental Protection Agency. Our industry supports the goal of improved water quality, but if current EPA proposals on chloride limitations in fresh water bodies are strictly enforced, the impact on our industry would be severe. Our industry is actively working with Federal and State EPA, State DNR's and local regulators to comply. Much of our technology however, is dependent on use of high concentrations of salt to ensure a stable and safe product. Fundamental research by the U.S. Food Fermentation Laboratory is revealing possible new approaches to resolve this problem, but much more research is needed before processes are developed that assure food safety and quality products to the consumer and economic practicality to the processor.

Another problem related to food safety has to do with the possible growth of food pathogens, such as Listeria, in lightly acidified or non-acidified vegetable products that are stored under refrigeration. In an attempt to meet changing consumer demands, we fear the possibility of Listeria problems in some of these products. In fact, Listeriosis has been found to occur from the consumption of coleslaw. We need research to direct the pickled vegetable industry toward the development of safe processes and products.

Of immediate concern is the need for the assignment of a molecular Geneticist and a Microbial Ecologist at this laboratory. The scientists already on the staff have raised the level of understanding of fundamental microbial systems based on more than 50 years of study. They now need the special skills of such a person to work on the biotechnical aspects of the newly discovered systems. It is our goal to overcome these environmental and food safety problems in a joint federal/state/industry team as it is unlikely that operating individually a solution could be found in a reasonable time frame. The need is immediate and pressing. The knowledge and skills of basic research found in ARS will form the sound basis for all future work by the industry.

Furthermore, it is time to review the critical funding situation that exists at the U.S. Food Fermentation Laboratory which we explain as follows based on our information and estimates:

The Food Fermentation Laboratory is currently funded at the level of $400,000 per

year.

A figure used by ARS/USDA to employ one scientist with salary, benefits, operating funds and all overhead is $150,000 per year. This is referred to as one Scientist Year, or SY for short. Only a small portion of this is salary, administrative "skim" comes off the top.

There are three scientists employed at the Scientist Year basis, Dr. Fleming, Research Leader, Dr. McFeeters, both working mostly on pickled vegetables and Dr. Walter, working on sweet potatoes. On this basis, the rate of $400,000 is $50,000 short of the level required.

Dr. Mark Daeschel, microbiologist, was working at the Laboratory on critical manipulation of microbial genes essential to modernizing the vegetable fermentations. Dr. Daeschel left and his funding slot was not replaced.

As a temporary substitute , Dr. Fleming has secured two post-doctorates through other channels. These are assigned the $40,000 level only marginally. Salary is only part of that. These are only assigned for one or two years at most. This is a temporary personnel approach, not satisfactory to meet the need for the long haul.

WHAT IS NEEDED:

Funding to bring the laboratory to a support appropriate for three Scientist Years.....$450,000/Year

Replacement of Dr. Daeschel's slot, one Molecular Biologist to continue work on genetic modification of lactic acid organisms for fermenting vegetables to meet the need..... 150,000/Year

Assignment of one Microbial Ecologist to be concerned with microbial spoilage of pickled vegetables, particularly relating to spoilage of vegetables held at lower levels of salt and acid with limited processing inputs. This scientist would address the enormous environmental challenge as well..... 150,000/year

EQUIPMENT:

The laboratory requires state of the art equipment which it now lacks. It is working with out-dated and in some cases, worn out equipment.

MINIMUM..... 200,000/year

TOTAL..... 950,000/year

Current funding level..... 400,000/year

Short fall.....$550,000/year

It is essential that every effort be made to correct this funding short fall in as short a time span as possible because of the immediate and recurring emergency situation facing growers and processors.

A separate situation exists at the ARS Crops Research laboratory at University of Wisconsin where remarkable progress is being made on onion, carrot and pickle development. The investigations have widened the scope of opportunities. Permanent funding is necessary to solve problems requiring several years of testing, where genetics and breeding research is involved. Here are the high priority areas outlined by the Joint Council of Food and Agricultural Sciences. These are the research areas where we believe significant contributions to agriculture can be made with the addition of a fourth scientist, a horticulturist with expertise in vegetable crops and modern laboratory techniques. Such an addition would allow this laboratory to perform more adequately both the much needed germplasm development and the research underpinning the plant breeding efforts.

ARS Administration at the National Program Staff and Area level has been very helpful in providing short term funds, but permanent funding is needed for research projects described as follows:

Genetic Improvements Necessary for Pickles, Onions and Carrots

Carrot germplasm currently available to the seed industry in the United States lacks certain genes that would enhance the carotene content (Vitamin A) and give a sweeter, more mild flavor. Additionally, with fewer chemical compounds available for pest management control, carrots lack the proper genetic mix to have resistance to the nine major diseases and pests that affect the crop. To fill these requirements, carrot germplasm from the Far East and Mideast which bears genes for quality and disease resistance will need to be incorporated into American germplasm.

The onion industry has been without the germplasm pool needed to create a onion that has the long dormancy and sweet flavor necessary to consumer needs. Other benefits to genetic improvements would include disease and pest resistance to the six major pest problems associated with production. To meet these needs, onion germplasm with genes for long dormancy and mild flavor from northern Europe and equatorial regions will need to be incorporated into American germplasm.

Pickles currently suffer from a wide array of diseases and a high sensitivity to environmental stresses. These factors make the production of a high quality vegetable, acceptable to the consumer very difficult. To create an improved pickling cucumber, germplasm from India, China, and Southeast Asia which has genetic material for resistance to some of these disease and stress problems, will need to be incorporated into American breeding lines.

In all the above examples germplasm exists, however a variety of techniques and methodology must be used to achieve success. Gene mapping, gene expression in tissue culture, the use of isozymes and restriction fragment length polymorphisms (RFLP) in addition to traditional plant breeding work are necessary to meet the future demands of the vegetable industry.

To meet the demands of the consumer and industry needs, consideration of a fourth scientist as mentioned above at the SY rate of $150,000 is suggested.

Thank you for your consideration of these needs and your expression of support for the ARS/USDA.

MONDAY, MARCH 26, 1990.

NORTH CAROLINA USDA RESEARCH FACILITY

WITNESSES

WILLIAM HIRZEL, HIRZEL CANNING CO.
RICHARD HENTSCHEL, NATIONAL KRAUT PACKERS ASSOCIATION

Mr. WHITTEN. Mr. Hirzel?

Mr. HIRZEL. Thank you, Mr. Chairman.

Sour kraut was about 100 years ahead of pickles.

I am Bill Hirzel, I am from Hirzel Canning Company, a small canning company in the great state of Ohio.

I appreciate the opportunity to come and submit testimony in front of you.

At this time I would like to thank you and your committee for doing such an excellent job with our agriculture research.

Mr. WHITTEN. We try to. We have limitations on the amount of money for things like that, but we try to.

Mr. HIRZEL. I think you are doing a very fine job.

Furthermore, I would like to expand on what I said about the USDA research facility in North Carolina that the previous members mentioned. Dr. Flemming and his group, with a small rather tightly run laboratory, do an excellent job for our industry, and that is the sour kraut industry.

The particular concerns that we have are pressures from the state and federal EPA to reduce the amount of chlorides. The priority assignment of a microbiological ecologist to this USDA laboratory in the North Carolina campus would be the utmost of importance. The funding support for this scientist amounts to $150,000. As a taxpayer, it seems strange a small portion of this is only salary and the rest of it is considered administrative. I wonder what we can do to change that.

The laboratory molecular biologist Mark Daeschel moved to another university and with his departure the laboratory funding was moved. Dr. Flemming says to us, food processors, people building these products, we have to use less of these environmentally dangerous compounds, whether it be agri-chemicals or whether it be pure salt in our environment. So, the problem we have is the, we reduce the amount of salt we use in our product. We have another problem as far as food safety and the health aspects of it.

There is a danger of other organisms growing that can cause serious illness. That is why we are asking to certainly maintain this funding.

If possible, realizing you have a limited budget, somehow to scrap a little bit more over in his direction. As a government laboratory and a government agency, he is doing very, very well with as little as he has.

Every time I go down there, I am very impressed with what he can do.

To summarize, I guess what we need is funding for this laboratory to support the three scientists, Dr. Flemming, Dr. McFeeters, and Dr. Walter. That amounts to $450,000.

The other one is the replacement of Dr. Daeschel's slot, which is $150,000. Then we would like to assign a new ecologist, $150,000; of course, we would like to update the laboratory.

I am sure you will take these numbers into consideration. The total we are talking about is $950,000.

I would like to thank you for the opportunity to sit in front of your committee. I, as a small businessman and a company that represents American agriculture, I think we certainly have an opportunity to sell our products worldwide right now.

I think it is very important that we keep our scientists, and particularly our government scientists, well funded. I think in this particular case, and I know a lot of government agencies aren't always as efficient, but in this particular case that laboratory is very efficient.

The challenge I would like for you is I would like to know how we can reduce the $150,000 a year that it costs to get a little bit of money to the scientists. I don't understand where all that money keeps going.

Mr. WHITTEN. I don't know. One of our biggest problems is the government can't keep spending and not paying, which is the policy we have been following.

In the event we get in trouble, the Federal Reserve can issue money. I think they are meeting trouble. The money is getting so plentiful, it won't buy anything.

Our problem here is how you are going to keep up with what you are already doing. It takes more dollars to do the same thing. As a nation, we run a whole lot of risks.

I tried to prove what was happening to the farmers. Now we have proved that, but look what the farmers have done to the country. I mean, when they go broke, the country also goes broke.

I don't know what we can do, but we are going to try our best.

Thank you very much.

[Mr. Hirzel's prepared statement follows:]

A STATEMENT OF CONCERN FOR SUSTAINED
AND INCREASED RESEARCH BY THE
AGRICULTURAL RESEARCH SERVICE/USDA
AND in particular for the:

U. S. Food Fermentation Laboratory, ARS/USDA
Department of Food Science
North Carolina State University
Raleigh, North Carolina

Research Leader:
Dr. Henry P. Fleming

Principal Witness: Mr. William Hirzel, Chairman, Research Committee, National Kraut Packers Association (Hirzel Canning Company., Toledo, Ohio)

ON THE OCCASION OF Hearing March 26, 1990 U. S. House Appropriations Subcommittee on Agriculture, Rural Development and Related Agencies.

Your courtesy in allowing us to appear and present testimony at this Hearing is deeply appreciated. We thank the committee for their attention to the needs of the Agricultural Research Service. We urge strong and increased support for federal research in cooperation with growers and processors to better serve consumers. A sustained commitment is required for fundamental research ever to have practical application.

We support the view that improved technology in agriculture will enable growers and processors to overcome the so called farm problem. The Agricultural Research Service of U.S. Department of Agriculture is a vital tool in this effort.

Although the U. S. Food Fermentation Laboratory, ARS/USDA is located on the campus of North Carolina State University, it is serving the needs of the growers, processors and consumers of the entire United States and because of its reputation of accomplishments is recognized

now in many parts of the world.

Despite the fact that this ARS laboratory is located in North Carolina its research for sauerkraut in a few short years, has had practical application for packers in major producing states in the North Central and Eastern regions. The newly developed system of topping kraut juice tanks with nitrogen heads keeps this useful food from being put into waste lagoons and enabling the Vitamin C content to be preserved and used. Research on the use of specially selected bacterial starter cultures may lead to a further reduction in waste. Research on processing cabbage using less salt than current industry standards for safe and stable shelf life is another area of work that will take considerable effort before practical processes and products can be made available to the industry and consumer respectively.

Of particular emergency concern are the pressures arising from the State and Federal EPA establishment of water quality levels with low chloride limits. The Sauerkraut industry feels the long term solultion will be found in the manufacturing portion of the process used to make Sauerkaut, making the of disposal of effluents much safer for the environment. Any change in processing methods must incorporate controls for safety of products for consumer consumption.

A priority of assignment to overcome these environmental issues puts the commitment for one Microbial Ecologist, at the top of the list. We implore your concern for this need. Preliminary investigations indicate that with the skills of a microbial ecologist applied to

these environmental problems and food safety, the answers can be found and implemented in practical commercial processing. The scientific skills required are beyond the abilities of the processing industry itself and your help is begged.

The work at this laboratory also operates with Cooperative Memorandum Agreements with the Pickle Packers International, Inc. and the National Kraut Packers Association, Inc. for industry funding.

We understand the U.S. Food Fermentation Laboratory is currently funded at the level of approximately $400,000 per year. The work is directed to solving fundamental problems in all pickled vegetables plus sweet potatoes.

A critical funding situation exists at this laboratory and can be explained as follows:

> A figure used by ARS/USDA to employ one scientist with salary, perks and overhead is $150,000.00 per year.
> This is referred to as one Scientist Year, or SY for short. Only a small portion of this is salary. Administrative "skim" comes off the top.
>
> There are three scientists employed at the Scientist Year basis, Dr. Fleming, Research Leader; Dr. McFeeters, both working mostly on pickled vegetables and Dr. Walter, working on sweet potatoes. On this basis, the rate of $400,000.00 is $50,000.00 short of the

level required.

Until recently, Dr. Mark Daeschel, biotechnologist, was working at the laboratory on critical manipulation of microbial genes essential to modernizing the vegetable fermentations. Dr. Daeschel left and his funding slot was not replaced.

As a temporary substitute, Dr. Fleming has secured two post doctorates through other channels. These are assigned at the $40,000 level. Salary is only a part of that. These are only assigned for one or two years at most. This is a temporary personnel approach, not satisfactory to meet the need for the long haul.

WHAT IS NEEDED:

Funding to bring the laboratory to a support level appropriate for three Scientist Years.....$450,000/Year
Replacement of Dr. Daeschel slot, one Molecular Biologist to continue work on genetic modification of lactic acid organisms for fermenting vegetables to meet the need..... 150,000/year

Assignment of one Microbial Ecologist to be concerned with microbial spoilage and food safety of pickled vegetables, particularly relating to

spoilage of vegetables held at lower levels of salt and acid with marginal sophisticated processing procedures. This scientist would address the enormous environmental challenge as well..... 150,000/year

EQUIPMENT:

The laboratory requires state of the art equipment which it now lacks. It is working with out-dated and in some cases, worn out equipment.

MINIMUM..... 200,000/year

TOTAL..... 950,000/year

Current funding level..... 400,000/year

Short fall.....$550,000/year

It is essential that every effort be made to correct this funding short fall in as short a time span as possible because of the immediate and recurring emergency situation facing growers and processors.

Thank you for the opportunity to appear before your Committee to explain our progress and our industry's needs.

Telephone (419) 693-0531

HIRZEL CANNING COMPANY

GROWERS AND PACKERS OF STAR CROSS VEGETABLES

411 Lemoyne Rd. at Woodville Rd. ★ Toledo, Ohio 43619

March 26, 1990

The U.S. House Appropriations Subcommittee on Agriculture, Rural Development and Related Agencies

The Honorable Jamie Whitman

Thank you for allowing me to present this testimony. As representative of the growers and processors of the cabbage and kraut industry, I would like to say that we support the view that fundamental research in agriculture is a vital tool for solving the problems that face our environment today.

Of particular concern are the continuing pressures from federal and state EPA to reduce the amount of chlorides in our waste effluent.

The priority assignment of one Microbal Ecologist to the USDA Fermentation Laboratory on the North Carolina State University campus is of utmost importance. The funding to support this scientist amounts to 150,000/yr. Only a small portion of this is salary. Administrative "skim" comes off the top.

The laboratory's Molecular Biologist, Dr. Mark Daeschel, has recently moved to another university. With his departure also went the laboratory's funding that supported his position. We need to replace this funding in order to hire another biologist who will address the current problem of food safety that faces the industry today.

Current research work by Dr. Flemming at the ARS laboratory at North Carolina State University is developing systems for topping kraut juice tanks with nitrogen to keep the processor from having to discharge useful food into waste lagoons. In addition, research is being done to reduce the amount of salt necessary to make sauerkraut. This process will have to be further researched to guarantee the food's safety.

The scientific skills required are beyond the processing industry itself. With your help, we can obtain the technology required to build a safe product.

What is needed:

1. Funding for the laboratory to support the three existing scientists: Dr. Fleming, Dr. McFeeters, and Dr. Walter.	$450,000
2. The replacement of Dr. Daeschel's slot: one Molecular Biologist.	$150,000
3. The assignment of one Microbal Ecologist to address microbial spoilage and food safety.	$150,000
4. The laboratory requires state-of-the-art equipment which it now lacks. The lab is working with out dated and sometimes worn out equipment.	$200,000
Total:	$950,000
Current funding level:	$400,000
Short fall:	$550,000

It is essential that every effort be made to correct this funding short fall in as short a time span as possible due to the immediate and recurring emergency situation facing growers and processors.

Thank you for the opportunity to appear before your Committee and explain our stance and our industry's needs.

Sincerely,

William J. Hirzel

William J. Hirzel

MONDAY, MARCH 26, 1990.

MARINE SHRIMP RESEARCH

WITNESS

THOMAS D. McILWAIN, DIRECTOR, GULF COAST RESEARCH LABORATORY CONSORTIUM

Mr. WHITTEN. Dr. Tom McIlwain?

Mr. MCILWAIN. It is always a pleasure to be here and testify before your committee.

Today I am representing the Gulf Coast Research Laboratory Marine Shrimp Farming Consortium, made up of the Gulf Coast Research Laboratory in Mississippi; The Oceanic Institute, Hawaii; Tufts University, Massachusetts; Texas A&M University System, Texas; Waddell Mariculture Center, South Carolina; and the University of Arizona, Arizona.

This afternoon I will highlight our progress, accomplishments and future plans. Complete written testimony has been submitted for the record. We appreciate the continued support Congress has provided the marine shrimp farming program, including $3.2 million for fiscal year 1990.

Over the past five years, the consortium institutions in cooperation with private industry have generated new technologies for producing premium quality marine shrimp at competitive prices.

Mr. WHITTEN. How does this operate? Do you have an agreement about who is going to do what?

Mr. MCILWAIN. When we started this consortium, we looked at what we had around the country. We had diverse groups duplicating efforts. We thought we could pull all this together and have a unified effort to direct toward the, solve the problems and reducing the risk of this developing industry.

Mr. WHITTEN. That makes it more successful than it would be each going your own way?

Mr. MCILWAIN. Exactly.

I think we have a very close working relationship with the industry as it is developing throughout the Nation. What we have been doing as scientists is working with those industry people to identify the problems that they are having.

Then we try to bring the best expertise we can to solve that problem and then put it in a management mode and get it back out to that industry so that they can solve their problem.

For instance, we have had a problem in viral disease. We finally developed a technology in being able to identify those diseases and being able to control the effects of those diseases.

Like a cold, if you get a bunch of kids in a small room together and everybody has a cold, chances are everybody will end up with a cold in a week or two.

The same thing with shrimp or chicken or anything else. When you bunch them together in culture centers, chances are you are going to have a problem.

We have been able to develop technology and reduce those problems.

One of the things is the disease problem. This has led to a lot of problems around the world in addition to those that we have had here in this country. It is actually working to the advantage of our efforts here in the United States to develop that thing.

It appears that by virtue of the technology that we have been able to develop and put together as a result of this program, ultimately it will give us an edge in developing the shrimp industry here in this country over the long haul.

It is critical to the success of the United States shrimp farming industry to consider the environmental quality, to animal health, disease control and the assurances of a good quality feed. By being able to do these things, we feel like it is giving the United States an advantage.

What we are seeing in other countries that are producing these marine shrimp is the fact that severe disease problems are impacting the principal producers around the world. This in itself is actually creating an opportunity for us here. We are able to do it better than they are over the long haul.

We have the infrastructure, we have the technology, we have the people in place, the equipment to be able to do this. By working at this as a consortium, we are able to bring all of these forces to bear.

I think over the long haul it will bear me out that we will be competitive and be able to continue developing that industry. The consortium has fostered collaboration of a number of our states. We have been able to take the technology we have developed and apply it to actual commercial operations in Hawaii, Texas and South Carolina.

We have got a farm that is interested in Mississippi. We have been able to take this information and give it to them. We are actually beginning to see people doing a very good job of producing shrimp in this country.

The consortium is now poised to expand its efforts in the cooperative public industry and supplier research activities and development and technology transfer. To fully capitalize on the opportunity to become competitive in the future in the world, we must expand the public-private cooperative effort to look at disease prevention, diagnosis, screening, certification and specific-pathogen-free broodstock, maturation, reproduction hatchery and larval-rearing technologies.

New initiatives for the coming years include the development of breeding disease-resistant shrimp, exploiting potentially positive environmental contributions and by-products and advanced packaging and marketing technologies.

To be able to do this, we are asking for a level of funding of about $5 million for 1991.

In looking at our program over the years, what we have asked the United States Department of Agriculture and the Cooperative Research Service to evaluate our effort and make sure we continue to be on track and are doing what we say we are going to do to you.

Last year in 1989, fiscal year 1989, USDA, CSRS put together a team of scientists and businessmen. They evaluated our program. Let me quote from some of the results. It says, the organization

and management of the consortium is found to be highly satisfactory, and the project principal investigators were found to be without exception highly competent, respected scientists and leaders in their fields in shrimp research, bringing a good mix of disciplines to the marine shrimp farming program.

We feel good about that.

In 1988, the world's marine shrimp farmers produced about 22 percent, and I think in 1989, 26 percent of all the shrimp that were available on the world market.

This represents a farm gate value of approximately $2.5 billion. Importantly, this increased production reflects the investment other countries have put into their marine farming activities in aquaculture development in general.

The United States trade deficit is $7 billion and the marine shrimp accounts for $1.7 billion of that activity. This is the only deficit we have in the agricultural sector and represents both consumers increased in their demand and our inability to meet that demand domestically. If we would capture one or two percent of that thing, we would actually end up with a multibillion dollar industry here in the United States.

In an effort to do this, the consortium adopted an approach where scientific expertise is sensitive to business and marketing principals and needs. We, again, are continuing our close association with the industry so that we can help them solve the problems that they identified to us.

We made a commitment to the Congress to bring this scientific and institutional support and our resources to bear on developing this industry. We are coordinating activities with other agriculture programs, especially the Center for Tropical and Subtropical Aquaculture and the joint ad hoc subcommittee on aquaculture.

The consortium is responsive to the Farm Act of 1985. It pertains to the aquaculture and the national aquaculture plan. In doing this, we are working with 12 private companies throughout the Nation in Mississippi, Hawaii, Texas, South Carolina and Idaho to foster this joint industry.

It should be noted the consortium will increasingly act as a catalyst, planner, coordinator and supporter of nonconsortium activities in public and private sectors which contribute to a United States marine shrimp farming industry.

I again thank you for the invitation to appear here. I appreciate your support.

[Dr. McIlwain's prepared statement follows:]

TESTIMONY

TO

THE HOUSE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES APPROPRIATION

The Honorable Jamie L. Whitten, Chairman

FOR

U.S. MARINE SHRIMP FARMING PROGRAM
GULF COAST RESEARCH LABORATORY CONSORTIUM

BY

Dr. Thomas D. McIlwain, Director
Gulf Coast Research Laboratory
Ocean Springs, Mississipi

March 26, 1990

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, I APPRECIATE THE OPPORTUNITY TO TESTIFY BEFORE YOU IN SUPPORT OF CONTINUED FUNDING FOR THE GULF COAST RESEARCH LABORATORY CONSORTIUM'S MARINE SHRIMP FARMING PROGRAM. THIS AFTERNOON I REPRESENT THE GCRL CONSORTIUM AND ITS MEMBERS; THE GULF COAST RESEARCH LABORATORY, MISSISSIPPI; THE OCEANIC INSTITUTE, HAWAII; TUFTS UNIVERSITY, MASSACHUSETTS; TEXAS A&M UNIVERSITY SYSTEM, TEXAS; WADDELL MARICULTURE CENTER, SOUTH CAROLINA; AND THE UNIVERSITY OF ARIZONA, ARIZONA. THIS AFTERNOON I WILL HIGHLIGHT OUR PROGRESS, ACCOMPLISHMENTS AND FUTURE PLANS. COMPLETE WRITTEN TESTIMONY HAS BEEN SUBMITTED FOR THE RECORD. WE APPRECIATE THE CONTINUED SUPPORT CONGRESS HAS PROVIDED THE MARINE SHRIMP FARMING PROGRAM, INCLUDING 3.2 MILLION FOR FY 1990.

OVER THE PAST FIVE YEARS, THE CONSORTIUM INSTITUTIONS, IN COOPERATION WITH PRIVATE INDUSTRY, HAVE GENERATED NEW TECHNOLOGIES FOR PRODUCING PREMIUM QUALITY MARINE SHRIMP AT COMPETITIVE PRICES. WE ARE EXPANDING OUR NATIONAL SHRIMP DISEASE PROGRAM TO CONTAIN THE SPREAD OF SHRIMP DISEASE IN THE UNITED STATES AND ELIMINATE ASSOCIATED MORTALITY AND CROP YIELD PROBLEMS. WE HAVE SECURED A CRITICAL BREAKTHROUGH IN VIRAL DIAGNOSIS, WHICH WILL MAKE POSSIBLE THE ESTABLISHMENT, MAINTENANCE AND SUPPLY OF DISEASE-FREE (SPECIFIC-PATHOGEN-FREE) SHRIMP BROODSTOCK AND SEED.

IT NOW APPEARS THAT WE WILL SUCCEED IN GAINING A COMPETITIVE ADVANTAGE FOR U.S. MARINE SHRIMP FARMERS. THIS WILL BE ACCOMPLISHED THROUGH THE DEVELOPMENT OF CONTROL, PRODUCTION, PROCESSING, PACKAGING AND MARKETING SYSTEM TECHNOLOGIES THAT

EXPLOIT DOMESTIC OPPORTUNITIES THAT ARE INHERENTLY AVAILABLE IN THE UNITED STATES. THESE OPPORTUNITIES INCLUDE ADVANCED INFRASTRUCTURE, ECONOMIC STABILITY, EQUIPMENT, SERVICE AND LABOR CAPABILITY, AND RELIABILITY AND OUR MARKET PROXIMITY, SOPHISTICATION, AND SIZE. ESPECIALLY CRITICAL TO THE SUCCESS OF U.S. FARMING AND MARINE SHRIMP FARMING IS OUR COUNTRY'S COMMITMENT TO WATER QUALITY, ENVIRONMENTAL PROTECTION, ANIMAL HEALTH, DISEASE CONTROL (PREVENTION, DIAGNOSIS AND TREATMENT), AND THE ASSURANCE OF FEED QUALITY.

SEVERE DISEASE AND ENVIRONMENTAL PROBLEMS ARE IMPACTING THE PRINCIPAL INTERNATIONAL SUPPLIERS OF FARMED SHRIMP, CREATING ADDED OPPORTUNITY FOR THE UNITED STATES. IT IS UNLIKELY THAT INTENSIVE AND HIGH GROWTH RATE SHRIMP FARMING CAN BE SUSTAINED IN COUNTRIES LACKING A SOPHISTICATED INFRASTRUCTURE. IN THE UNITED STATES, HOWEVER, WE CAN AND INTEND TO EXPAND THE INFRASTRUCTURE NOW DEDICATED TO AGRICULTURE BY ADDING CAPABILITIES FOR AQUACULTURE INCLUDING DIAGNOSTIC CENTERS, ANIMAL HEALTH CERTIFICATION, AND ENSURING ADEQUATE SUPPLIES OF QUALITY BROODSTOCK AND SEED.

IT IS VIRTUALLY IMPOSSIBLE TO DEVELOP THE NECESSARY CRITICAL MASS FOR EXPANDING COMMERCIAL AQUACULTURE BY UNDERTAKING BROADBASED APPLIED RESEARCH INVOLVING A VARIETY OF MOLLUSKS, CRUSTACEANS, AND FINFISH IN PUBLIC FACILITIES. EXPERIENCE HAS SHOWN THAT INDUSTRY DEVELOPMENT REQUIRES THE IMPOSITION OF RIGOROUS LIMITS IN PROJECT SCOPE, AREAS OF EMPHASIS, AND GOALS TO PREVENT DILUTION OF FUNDING. THEREFORE, THE GCRL CONSORTIUM ACQUIRES AND ALLOCATES RESOURCES AT LEVELS SUFFICIENT TO ACCOMPLISH SPECIFIC PRIORITY TASKS ESSENTIAL

TO THE EXPANSION OF DOMESTIC MARINE SHRIMP FARMING. THE MARINE SHRIMP FARMING PROGRAM IS DIRECTED, NARROWLY FOCUSED, AND RESULTS ORIENTED. IT MANDATES THE DIRECT INVOLVEMENT AND ACCOUNTABILITY OF LEADING RESEARCH INSTITUTIONS, COMMERCIAL SHRIMP FARMS, AND SUPPLIERS.

THE CONSORTIUM HAS FOSTERED THE COLLABORATION OF THE THREE SHRIMP PRODUCING REGIONS, HAWAII, SOUTH CAROLINA, AND TEXAS. THESE THREE REGIONS HAVE DEVELOPED AND EXECUTED A STANDARDIZED ECONOMIC MODEL AND A STANDARDIZED APPROACH TO MARKET ANALYSIS. CURRENTLY, THE CONSORTIUM IS COORDINATING A COMPARATIVE AND SIMULTANEOUS EVALUATION OF ADVANCED GROWOUT TECHNOLOGY IN HAWAII, SOUTH CAROLINA, AND TEXAS. THE CONSORTIUM INSTITUTIONS, IN COOPERATION WITH PRIVATE INDUSTRY, HAVE ADOPTED STANDARD MANAGEMENT, OPERATING, AND WATER QUALITY MONITORING PROCEDURES, AND ARE UTILIZING FEED FROM A SINGLE COMMERCIAL BATCH PRODUCED IN IDAHO.

THE CONSORTIUM IS NOW POISED TO EXPAND ITS EFFORTS IN COOPERATIVE PUBLIC/INDUSTRY/SUPPLIER RESEARCH, DEVELOPMENT, AND TECHNOLOGY TRANSFER. TO FULLY CAPITALIZE ON THE OPPORTUNITY TO BECOME COMPETITIVE, WE MUST EXPAND PUBLIC/PRIVATE COOPERATIVE DISEASE PREVENTION, DIAGNOSIS, SCREENING, CERTIFICATION, AND SPECIFIC PATHOGEN-FREE BROODSTOCK, MATURATION, REPRODUCTION, HATCHERY AND LARVAL-REARING TECHNOLOGIES. NEW INITIATIVES ARE REQUIRED IN THE AREAS OF BREEDING DISEASE RESISTANT SHRIMP, EXPLOITING POTENTIALLY POSITIVE ENVIRONMENTAL CONTRIBUTIONS AND BY-PRODUCTS, AND ADVANCING PACKAGING AND MARKETING SYSTEM TECHNOLOGY. WE ARE THEREFORE REQUESTING CONTINUED SUPPORT AT A LEVEL OF 5

MILLION FOR FY 1991.

DURING FY 1989 THE CONSORTIUM'S MARINE SHRIMP FARMING PROGRAM'S ORGANIZATION AND ITS PROGRESS WAS RIGOROUSLY REVIEWED BY A UNITED STATES DEPARTMENT OF AGRICULTURE/COOPERATIVE STATE RESEARCH SERVICE SPONSORED INDEPENDENT TEAM OF SCIENTISTS AND BUSINESSMEN. THE INDEPENDENT REVIEW TEAM AND CSRS BOTH FOUND "THE ORGANIZATION AND MANAGEMENT OF THE CONSORTIUM TO BE HIGHLY SATISFACTORY:" AND THE "PROJECT PRINCIPAL INVESTIGATORS TO BE, WITHOUT EXCEPTION, HIGHLY COMPETENT, RESPECTED SCIENTISTS AND LEADERS IN THEIR FIELDS IN SHRIMP RESEARCH, BRINGING A GOOD MIX OF DISCIPLINES TO THE MARINE SHRIMP FARMING PROGRAM." THE REVIEW TEAM SUGGESTIONS FOR FURTHER IMPROVEMENT ARE BEING IMPLEMENTED AS APPROPRIATE.

IN 1988, THE WORLD'S MARINE SHRIMP FARMERS PRODUCED MORE THAN 22 PERCENT OF THE SHRIMP CONSUMED BY WORLD MARKETS. THIS REPRESENTS A FARM GATE VALUE OF $2.5 BILLION. IMPORTANTLY, THIS INCREASED PRODUCTION REFLECTS THE INVESTMENT OTHER COUNTRIES HAVE PLACED IN AQUACULTURE DEVELOPMENT. THE U.S. FISHERIES TRADE DEFICIT INCREASES YEARLY AND IS PRESENTLY ABOUT $7 BILLION. MARINE SHRIMP ALONE ACCOUNTS FOR $1.7 BILLION OF THIS DEFICIT. THIS IS THE ONLY DEFICIT IN THE AGRICULTURAL SECTOR AND REPRESENTS BOTH AMERICAN CONSUMERS' INCREASED DEMAND AND OUR INABILITY TO MEET IT DOMESTICALLY.

IF U.S. AQUACULTURE ACHIEVES A ONE- OR TWO-PERCENT SHARE OF THE DOMESTIC FOOD SUPPLY, IT WILL BE A MULTI-BILLION DOLLAR INDUSTRY. THE UNITED STATES DOMINATES WORLD AGRICULTURAL

PRODUCTION LARGELY BECAUSE AGRICULTURAL FARMING HAS RECEIVED ALL OF THE RESEARCH DEVELOPMENT AND ECONOMIC SUPPORT THE NATION COULD OFFER. WE BELIEVE AQUACULTURE WILL BENEFIT FROM A SIMILAR MARSHALING OF RESOURCES. WHAT IS REQUIRED IS A PARTNERSHIP OF INDUSTRY, GOVERNMENT, SCIENCE, AND ENGINEERING. THE CONSORTIUM HAS ADOPTED A MULTI-FACETED APPROACH WHERE SCIENTIFIC AND TECHNICAL EXPERTISE IS SENSITIVE TO BUSINESS AND MARKETING PRINCIPLES AND NEEDS.

THIS APPROACH IS EXTREMELY SUCCESSFUL AS IS THE CONSORTIUM PARTNERSHIP. WE MADE A COMMITMENT TO CONGRESS TO USE THE NATION'S SCIENTIFIC AND INSTITUTIONAL EXPERTISE AND RESOURCES TO DEVELOP A PROFITABLE MARINE SHRIMP FARMING INDUSTRY. WE HAVE HONORED THAT COMMITMENT. IN ADDITION TO MEMBER INSTITUTIONS, WE ARE COORDINATING ACTIVITIES WITH OTHER AQUACULTURE PROGRAMS, ESPECIALLY THE CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE AND THE JOINT AD HOC SUBCOMMITTEE ON AQUACULTURE.

THE CONSORTIUM IS DIRECTLY RESPONSIVE TO THE FARM ACT OF 1985 AS IT PERTAINS TO AQUACULTURE AND THE NATIONAL AQUACULTURE PLAN. IT EMPLOYS REGIONAL AND FUNCTIONAL APPROACHES INVOLVING SIX STATES AND IS EXPANDING. THE CONSORTIUM USES A SYSTEM PROBLEM-SOLVING APPROACH TO SHRIMP CULTURE PRODUCTIVITY, EMPLOYING REGIONAL AND SITE-SPECIFIC TECHNOLOGIES.

CURRENTLY, CONSORTIUM INSTITUTIONS ARE WORKING IN COOPERATION WITH THE FOLLOWING PRIVATE COMPANIES:

Amorient Aquafarm Incorporated, Hawaii

Pacific Sea Farms, Hawaii

Molokai Shrimp Farms, Hawaii

Laguna Madre Shrimp Farm, Texas

EDISTO Shrimp Company, South Carolina

Taylor Creek Shrimp, South Carolina

Atlantec Seafarms, South Carolina

Rangen Feeds, Idaho

Ziegler Brothers, Inc., Pennsylvania

The Red-Fish Farm, Inc., Mississippi

CRYOVAC, South Carolina

Frito-lay of Hawaii, Inc., Hawaii

FINALLY, IT SHOULD BE NOTED THAT THE CONSORTIUM WILL INCREASINGLY ACT AS A CATALYST, PLANNER, COORDINATOR, AND SUPPORTER OF NON-CONSORTIUM ACTIVITIES IN PUBLIC AND PRIVATE SECTORS WHICH CONTRIBUTE TO A U.S. MARINE SHRIMP FARMING INDUSTRY.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, THE GCRL CONSORTIUM IS APPRECIATIVE OF YOUR SUPPORT. WE TAKE GREAT PRIDE IN OUR ACCOMPLISHMENTS TO DATE AND RESPECTFULLY REQUEST THE OPPORTUNITY TO CONTINUE OUR EFFORTS TO EXPAND THE MARINE SHRIMP FARMING INDUSTRY IN THE UNITED STATES.

MONDAY, MARCH 26, 1990.

AQUACULTURE REGIONAL CENTERS

WITNESSES

C.G. SHEPHERD, DIRECTOR, SOUTHERN REGIONAL AQUACULTURE CENTER

LESTER W. MYERS, PRESIDENT AND GENERAL MANAGER, DELTA WESTERN, INC.

LEO RAY, PRESIDENT, FISH BREEDERS OF IDAHO

KEVAN L. MAIN, DIRECTOR, CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE, THE OCEANIC INSTITUTE

KENNETH K. CHEW, DIRECTOR, WESTERN REGIONAL AQUACULTURE CENTER, DIVISION OF AQUACULTURE, COLLEGE OF FISHERIES, UNIVERSITY OF WASHINGTON

C.D. McNABB, DIRECTOR, NORTH CENTRAL REGIONAL AQUACULTURE CENTER, FISHERIES AND WILDLIFE DEPARTMENT, FISHERIES AND WILDLIFE DEPARTMENT, MICHIGAN STATE UNIVERSITY

HENRY S. PARKER, DIRECTOR, NORTHEASTERN REGIONAL AQUACULTURE CENTER, SOUTHEASTERN MASSACHUSETTS UNIVERSITY

Mr. WHITTEN. Dr. Shepherd and panel, we will be glad to hear from you.

Mr. SHEPHERD. Thank you.

My name is Gerry Shepherd. I serve as Director of the Southern Regional Center in Stoneville, Mississippi.

With me at the table are Mr. Lester Myers and Mr. Leo Ray. They serve on the advisory councils of two of the five regional aquaculture centers.

After I make a comment or two, I would like to ask them if they care to make statements.

The others in the room with us today are the directors of the four centers. We have submitted written testimonies we would like to offer for your consideration and for entering in the record.

Mr. WHITTEN. We are very proud of the developments we have made in aquaculture. We will be glad to hear from you.

Mr. SHEPHERD. It is certainly an increasing industry. The Agriculture Acts of 1980 and 1985 authorized establishment of the regional aquaculture centers. These have been in our programs, in operation since 1987.

We still have about a $6.5 billion deficit in aquaculture in the United States, a value of a private aquaculture production in the United States is somewhere over $650 million at the present time. We do have the opportunity here in the United States to produce many species we are importing.

Other directors from the other centers and myself served on the National Coordinating Council. We coordinate research and extension activities not only within each of the different regions but also among regions. That Council will be meeting for the next couple of days here in Washington.

As I said, we had a number of projects that are underway in each region now. We are getting fruit from these projects, we are getting publications, videos, other type of information out to the producers. I think our producers will comment on some of these aspects.

The funding authorized for the five centers was $7.5 million. The present appropriated level of funding is $3.75 million divided equally among the five different centers.

What we want to ask of this subcommittee is consideration for funding at the full authorized level. Without taking any more time from me, I would like to call on Mr. Lester Myers at this point.

Mr. MYERS. Thank you, Mr. Chairman, for the opportunity to present testimony in behalf of the regional aquaculture centers.

My name is Lester Myers. I am President and General Manager of Delta Western in Mississippi, the largest catfish feed mill in the United States. My family is in the catfish production near in Vernes, Mississippi.

For the past three years, I served as Chairman of the Industry Advisory Council of the Southern Regional Aquaculture Centers. Along with hundreds of aquaculture producers in the mid-south, our Mississippi producers depend heavily on information from the researcher and extension activities throughout the country.

Taken collectively, the producers, feed mills, processing plants and other segments of the catfish industry have a value of more than $1 billion.

The Regional Aquaculture Center concept offers a proven organizational structure to coordinate research and extension efforts throughout the United States.

The catfish industry which constitutes one half of private aquaculture production in the United States must deal with fluctuating supplies and market demand.

A research bulletin identifying demographic and attitudinal characteristics of catfish consumers has just been published. Additional and valuable information regarding seafood demand and usage is being prepared using results from this marketing and economics study.

From another project of the Southern Regional Centers has just been completed, 40 publications and four videos regarding production practices of several species in our region.

Techniques for improving nutrition and reducing production costs, controlling off-flair and disease and parasite problems are critical to maintain the high quality of cultivated aquaculture products.

One of the major benefits of regional centers is the excellent opportunity for industry inputs in determining priorities to solve our problems.

There are representatives from feed mills, financial institutions and the state department of agriculture serving on the Industry Advisory Council.

In 1988, the on-farm value of United States private aquaculture production was greater than $650 million. For proper technological information for us to continue to grow, we will have to have more and more funding.

I would like to thank you for your valuable effort put forward in developing the centers and your other effort put forward in the aquaculture industry.

Mr. WHITTEN. Thank you.

I lived in Indianola when I was a small boy. My father had a farm there.

Mr. RAY. I am Leo Ray. We have been in the catfish farm business for over 20 years. We have seen this industry grow from almost nothing to what it is now.

The aquaculture industry is now around $660 million, and 90 percent of that has developed in the last 10 years. These are the formative years. We will see aquaculture develop nationwide with many species the way we have seen catfish farming develop in Mississippi in this last 10 to 15 years.

Our need for research is enormous. Before the establishment of these five regional centers of research for the commercial trout industry was almost nonexistent. With the establishment of these five regional centers, the western region established five research priorities.

Last fall, research results from two of these projects' priorities was announced. From that research on soft shell egg disease and IHN, we have found solutions or identified problems to these two diseases.

The savings to the industry alone will save us more money yearly than the Federal Government has spent on WRAC.

A member of our industry who attended the first WRAC meeting who historically has been opposed to government funding, attended this meeting with the intent of doing what he could to prevent what he called a waste of government money in these five regional centers.

It gave me great pleasure last fall when this individual stood up in front of the United States Trout Farmers Association and asked that we support the funding of WRAC with all of our federal aquaculture research money because he said we got more benefit from this than from any government research program the trout industry ever had.

This is a uniform feeling among the trout industry towards the results of the WRAC or the five regional centers. The results we obtained came about by industry and researchers sitting down, identifying our problems, identifying the resources we had to work with these problems with, and then working together to get the results.

Two of our major research problems have found answers. We have developed the vaccine for the IHN virus which was killing over 50 percent of our fish at the size of three to four inches. As soon as we get clearance on that, we hope within a year, we will have that vaccine on the market. All of the Idaho industry will be using it.

The land grant college program has been an excellent research and extension program for agriculture throughout the history of this country. However, aquaculture had pretty much been excluded from that up until this concept because we had very little industry and very little direction in the five regional centers to aquaculture.

Anyone starting in the aquaculture field, the only place he could go for expertise to answer the questions that he had would be to his competitors. That is not a very conducive place for your answers.

WRAC has turned that around. We now have extension programs developing throughout the country in Idaho, as well as the

other states, in which these people now have access to quality information for assistance in getting their farms going.

I realize that programs like this cost money. As a businessman, I always felt I had to spend money in order to make money. I would like to have the return in taxes the catfish industry is paying on the return that the government is paying in that field.

Mr. WHITTEN. We appreciate it very much.

We have done lots of studies through the years. Many times when you don't have a concentration of things in one place you don't have a problem, but when you do, you begin to run into problems.

The problems we have been told about here are that for some of the catfish, there are two months in the year where they might have a problem with taste in some areas of the country.

The latest problem was that, birds hem the fish up in the corner and get their own supply. Then on the other side, environmentalists in some cases don't want you to kill the birds.

I am just telling you what comes to us. When you do something in high concentration, it seems to create problems which have to be dealt with. We recognize that.

I think we have a great future insofar as aquaculture is concerned.

How are you doing with growing shrimp in clear water, are you familiar with that?

Mr. RAY. We have geo-thermal water which is hot on a year round basis, but they have to grow it in high density.

Mr. WHITTEN. I just want you to know I read my mail.

Thank you very much. We appreciate your appearance.

Dr. SHEPHERD. Thank you, Mr. Chairman.

The details of the program are in the testimony.

[The prepared statements of Dr. Shepherd and his panel members follow:]

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES SUBCOMMITTEE ON APPROPRIATIONS MARCH 26, 1990

Concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

Written Statement By

DR. C. G. SHEPHERD, DIRECTOR
SOUTHERN REGIONAL AQUACULTURE CENTER
STONEVILLE, MISSISSIPPI

Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to offer testimony on behalf of the five Regional Aquaculture Centers. We sincerely appreciate the support this Subcommittee and other members of Congress provide these important aquaculture programs.

The Regional Aquaculture Centers for research, development, and demonstration were authorized by Title XIV of the Agriculture and Food Act of 1980 and the Food Security Act of 1985 (Subtitle L, Sec. 1475[d]). Center activities are cooperative with existing aquaculture programs of colleges and universities, State Departments of Agriculture, federal facilities, and non-profit private research institutions. The designated regions are Tropical/Subtropical, Western, Southern, North Central and Northeastern. The Centers encourage cooperative aquaculture research and extension educational programs having regional or national application to enhance viable and profitable commercial aquaculture production in the United States for the benefit of producers, consumers, and the American economy.

Under Section 1475[d] the authorized annual funding for the Centers was $7.5 million. The FY 90 appropriation was $3.75 million divided equally among the five Centers. We are requesting your support for funding these existing Centers at the full authorized level of $7.5 million.

The United States has a trade deficit of more than $6 billion for all fishery products, and aquaculture is the most rapidly growing segment of U.S. agriculture. U.S. private production is valued over $650 million. Per capita consumption of commercially produced and caught fish and shellfish has steadily increased for the past 25 years and was 15.0 pounds in 1988.

There is good potential for aquaculture expansion in the U.S. However, experience has shown that additional research and extension information will be essential for aquaculture to reach its full economic potential. A strong aquaculture industry will reduce our dependency on foreign production, provide alternative crops for our producers, improve our economy, and create new jobs. In 1989, on-farm value of catfish alone in the U.S. was greater than $330 million.

Efforts are being made to overcome constraints limiting growth of this complex industry. The segmented nature of previous programs and the lack of funding have been the greatest limitations. Significant future aquaculture development will result from the coordinated programs of the Regional Centers. User inputs are assured in these regional programs since industry representatives are involved in the decision-making processes.

The thirteen states and territories represented by the Southern Regional Aquaculture

Center are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, U.S. Virgin Islands and Virginia.

The following is a summary of ongoing programs for the Southern Region:

1. **Analysis of Regional and National Markets for Aquacultural Products Produced for Food in the Southern Region.**

   Scientists representing research institutions from four states are developing comprehensive marketing information on catfish and crawfish. Information has been obtained on consumer attitudes, awareness, usage and product suitability. Potentials and constraints for market expansion have been identified and are being evaluated, nationally and regionally. Several publications have already been completed from this project and more are forthcoming. There is a strong demand for these publications, and they will continue to be of considerable interest to producers, processors and other marketers of catfish, other finfish and crustaceans. Work on this project will be completed in 1990.

2. **Preparation of Southern Regional Aquaculture Publications.**

   Reference manuals and videos for production and marketing of aquaculture species adapted to the Southern Region were developed from this project. Eighteen scientists representing all states within the region are working cooperatively on numerous species adapted to the Southern Region. More than 40 publications and four videos dealing with catfish, crawfish, redfish, alligator, bass, forage species, baitfish and tilapia production have been completed. There is a very high demand for these materials which have been distributed nationwide. Interest has almost overwhelmed our ability to respond to these requests.

3. **Performance of Aeration Systems for Channel Catfish, Crawfish, and Rainbow Trout Production.**

   The efficiency of paddlewheel aerators, water blenders and oxygen enrichment systems are evaluated for improved production of crawfish, catfish and trout. This project involves eight scientists in five states. Better aeration is associated with improved water quality and is of utmost importance to aquaculture producers throughout the nation. This work is not only beneficial to quality of production but also to improved environmental conditions.

4. **Enhancement of the Immune Response to Edwardsiella ictaluri in Channel Catfish.**

   This project involves cooperative work among scientists in three states. The general objective is to determine if the immune response of stressed and unstressed channel catfish to the disease enteric septicemia (ESC) can be enhanced with the dietary additives vitamin E, selenium and levamisole. Results from the first year's work provided information to allow scientists to develop possible combinations of these additives to best enhance immune response and to evaluate their use as feed supplements for prevention of this disease. This work began in 1989 and will be completed in 1991.

5. **Immunization of Channel Catfish.**

   This project involves cooperative work among scientists in three states with the general objective to develop specific immunogens and vaccination procedures to prevent enteric septicemia in catfish. Since no vaccines are available for warmwater fish, this work is needed to give aquaculturists tools to combat disease problems and increase production. These studies, which were initiated in 1989, will also be completed in 1991. Findings from

the first year's work on this project are promising and have provided information to allow evaluation of four vaccination protocols during the upcoming year.

6. **Influence of Nutrition on Body Composition and Sensory Quality of Farm Raised Catfish.**

The effects of dietary digestible energy/protein ratio, finisher diets and feeding procedures on yield, dressing percentage, body fat, and subsequent frozen storage quality and profitability of catfish are being investigated. Research and extension scientists in ten states are cooperating on this project. Results from these studies will show the effects of feeding catfish various ratios of protein to energy, various fat sources or different feeding schedules on growth and body composition and storage quality of frozen catfish fillets. This three-year project continues through 1991.

7. **Harvesting, Loading, and Grading Systems for Cultured Freshwater Finfishes and Crustaceans.**

Scientists from six states are collaborating on this project which began in 1989. Existing and new types of equipment are evaluated for seining, loading and grading crawfish and catfish in terms of improved efficiency, reduced injury and physiological stress to the animals, increased economic benefits and improved product quality. A regional finfish harvesting demonstration was held at Cohutta, Georgia, in October, 1989, and a crawfish demonstration is scheduled in Louisiana in the fall of 1990. Improved harvesting and grading techniques will be extremely valuable to producers and consumers of aquaculture products. This work will also continue through 1991.

8. **Develop a Statistical Data Collection System for Farm-raised Catfish and Other Aquaculture Products in the Southern Region.**

Sources of data, types of data needed, analytical techniques and collection methods will be established for different segments of the aquaculture industry. Sources and kinds of information needed have been identified and plans are underway for cooperative State and Federal agencies to develop procedures to collect the statistical information desired. Work on this project should be completed in 1990.

More than 60 scientists, representing all states and territories within the Southern Region, have collaborated on the eight projects listed above.

With the Regional Aquaculture Center concept now operational, we have a structure in place to develop and coordinate aquaculture research and extension activities throughout the nation if adequate support is provided. The Center Directors and USDA representatives function as the National Coordinating Council for Aquaculture to accomplish this.

We respectfully request that funding at the authorized level of $7.5 million be provided these extremely important programs.

Thank you for the opportunity to submit our testimony.

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS
MARCH 26, 1990

Concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

Written Statement By

Mr. Harold H. Benoit, Chairman
Louisiana Crawfish Promotion and Research Board
P.O. Box 44184, Capitol Station
Baton Rouge, Louisiana 70804

Mr. Chairman and Other Members of the Subcommittee:

We genuinely appreciate the opportunity to submit written testimony in support of the Regional Aquaculture Centers. I am Harold H. Benoit, a crawfish producer from Morse, Louisiana, and I also serve as Chairman of the Louisiana Crawfish Promotion and Research Board.

The Louisiana Crawfish Promotion and Research Board strongly supports the concept and structure of the Regional Aquaculture Centers. Title XIV of the Agriculture and Food Act of 1980 and the Food Security Act of 1985 authorized the establishment of regional aquaculture research, development and demonstration centers in the United States (Subtitle L, Section 1465[d]). The Centers encourage collaborative research and extension programs designed to compliment and strengthen existing programs provided by the Department of Agriculture and other public institutions. Members of the Louisiana Crawfish Promotion and Research Board have been impressed from the very beginning with the Center concept.

The authorized level of funding for the Regional Aquaculture Centers is $7.5 million. Actual annual funding to date, however, is well below the authorized level, with only $3.75 million appropriated in FY 90. We are requesting funding for the Regional Centers, which serve the entire United States, at the authorized $7.5 million level for FY 91.

The Louisiana crawfish industry, as we know it today, began about 30 years ago. There are now over 130,000 acres in crawfish production in Louisiana consisting of more than 2,500 individual ponds that produce 100 million pounds of crawfish annually. This industry continues to employ approximately 15,000 people in our state, and the on-farm value of production was approximately $60 million in 1987. Crawfish aquaculture now occurs to some extent in 25 states. As with most new agricultural crops, much help is needed in the areas of production, harvesting and marketing.

We would like to emphasize the fact that crawfish production costs, particularly harvesting costs, must be decreased to insure profitability to producers. Research and extension efforts to address these important areas are now underway through projects funded by the Southern Regional Aquaculture Center. Results from these projects will be extremely beneficial to our industry.

The U.S. imports 70% of the seafood it consumes. The crawfish industry is unique because we exported approximately three million pounds of crawfish to Europe last year. This export market represents only a very small part of our balance of trade, but is indicative of the potential for expanded exports for U.S. aquaculture products.

In 1988, three projects were initiated with support from the Southern Regional Aquaculture Center. These included much-needed work on marketing and economics of catfish and crawfish production and a study of pond aeration techniques for improved catfish, crawfish and trout production. A regional publications project also began in 1988, and so far over 40 publications and four videos on production practices for several aquaculture species in the Southern Region have been completed and distributed by extension aquaculture specialists. In 1989, five additional projects were initiated. These included research and extension work on catfish disease control, nutritional studies for improved quality and storage of catfish, and the development of improved techniques for harvesting and grading catfish and crawfish. Another project will address development of procedures for collecting statistical data urgently needed by the aquaculture industry for more effective and efficient production and marketing strategies.

Results from these projects should greatly enhance the position of aquaculture as an alternative agricultural crop, not only for the Southern Region but also for other regions of the country. Each project that is funded has input and review from research, extension and industry personnel so that practical, well-integrated programs, relevant to industry needs, are selected.

Again, we encourage funding at the authorized $7.5 million level for the five existing Regional Centers. We are excited about the results we have already seen from the Regional Center concept and know that the system works to address our industry problems.

Thank you for providing us the opportunity to submit this testimony on behalf of the Regional Aquaculture Centers.

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS
MARCH 26, 1990

Concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

Written Statement By

MR. DAVID PEARCE, PRESIDENT
PEARCE CATFISH FARM
BROWNS, ALABAMA

Thank you, Mr. Chairman, for the opportunity to present testimony on behalf of the Regional Aquaculture Centers. My name is David Pearce. I am a fish farmer from Browns, Alabama, and have been raising fish since 1971. I serve on the Industry Advisory Council for the Southern Regional Aquaculture Center, and have also served as president of Catfish Farmers of America and Alabama Catfish Producers.

I have seen the aquaculture industry in this country grow from its infancy in the early 70's to the adolescent stage as we begin the 90's. Without the help of many research and extension specialists from around the country, aquaculture would still be trying to solve the problems which inhibited the growth of the industry in the early days. Although we are very thankful for this help, it was often duplicated and uncoordinated in its approach. The Regional Aquaculture Center concept, with its involvement of producers, researchers, and extension personnel from several states who are involved with different species, provides us an opportunity to change this fragmented approach. Not only will funds provided to the Centers be spent more productively, but a better understanding and working relationship between the research institutions in a region should ensure more effective use of research dollars from other sources as well. The Regional Aquaculture Center concept provides an excellent forum to identify, analyze, and solve the problems facing aquaculture today and in the future.

In summary, I would like to thank you for your support of aquaculture. With the continued and additional support of aquaculture research, the aquaculture industry is sure to mature to its maximum potential. We are requesting that the Regional Aquaculture Centers' funding be increased to the $7.5 million authorized level for FY 91.

Thank you for the opportunity to offer these comments.

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS

MARCH 26, 1990

Concerning
SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Mr. Walter Landry, President
Louisiana Aquaculture Association
Baton Rouge, Louisiana

Thank you, Mr. Chairman, for the opportunity to present support testimony on behalf of the Regional Aquaculture Centers. My name is Walter Landry. I am a sugarcane farmer and an aquaculture producer. All my years have been spent in agriculture. In an effort to diversify my farming operation and to take advantage of the many natural areas available in Louisiana for aquaculture or water farming, I now produce crawfish, catfish, striped bass, redfish and shrimp. Aquaculture is an excellent diversification with agriculture.

As President of the Louisiana Aquaculture Association, I represent over 3000 producers of aquaculture products in Louisiana in 150,000 acres of controlled ponds and 300,000 acres of leased oyster bottoms. Aquaculture represents over $100 million to producers of crawfish, catfish, oysters, softshell crabs, softshell crawfish, alligators and other finfish in Louisiana.

In the past we have received invaluable production information from our universities and extension scientists. These people have provided facts on which we have made decisions and kept our operations profitable. A problem that you identified several years ago was that the information and research was spread over a large group of people, departments and agencies with little coordination between principal groups and agencies. In the short time since the formation of the Regional Aquaculture Centers in 1987, the Centers have effectively coordinated research and extension aquaculture programs throughout the nation. This has been a strong aspect of the program. The research and extension programs of the Centers have greatly impacted our aquaculture industries. For example, in a Southern Regional project both regional and national markets have been identified for aquacultural products (catfish and crawfish). These markets have given additional outlets for our products. The funding of marketing research has greatly assisted the producers and processors of aquaculture products.

Production research and extension demonstration projects have been conducted on aerators and water quality, diseases, nutrition and harvesting systems. All of these areas are critical areas if aquaculture is to continue to grow. The Regional Aquaculture Centers can consolidate, avoid duplication and involve all qualified regional scientists on the project. This is the way to do business - to consolidate scientists and budgets.

Scientists at 12 universities are developing educational, species-specific information in the form of printed materials and videos covering recommended production practices. This can save new producers money if they have all available updated information in a clear, neat package so that they may decide whether to produce a particular ~~fish or shellfish~~.

From the viewpoint of producers, the structure of the Centers to have industry inputs into areas of research and extension projects is excellent. We face constantly changing problems in our products and must be able to determine priorities and help to rank research projects that will solve our industry problems. The Industry Advisory Committee is composed of representatives of major fish, shellfish and mollusks cultured in the region. Our cry for help in various areas of research has effectively been answered by the Regional Aquaculture Centers.

The aquaculture producers appreciate the help and support of this Subcommittee. The authorization of $7.5 million for five Regional Centers was only funded at $3.75 million in FY 90. We hope that you will provide the fully authorized $7.5 million for the five Regional Aquaculture Centers in the FY 91 budget. This budget is necessary for the growth of aquaculture and for public and private efforts to support aquaculture to continue.

Thank you for the opportunity you have given me to offer these comments of support for the Regional Aquaculture Centers.

CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE

Testimony
before

The Agriculture, Rural Development and Related Agencies
Subcommittee on Appropriation
March 26, 1990

concerning

The Center for Tropical and Subtropical Aquaculture

Written Statement by

Dr. Kevan L. Main, Director
Center for Tropical and Subtropical Aquaculture
Honolulu, Hawaii

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to submit testimony on behalf of the Center for Tropical and Subtropical Aquaculture, and, by extension, all the regional centers. We appreciate the support the Subcommittee has given in previous years, and present testimony before you today to urge continuation and expansion of that support to the fully authorized level of $7.5 million.

The regional centers are a unique mechanism for coordinating and exploiting the research, development, demonstration and training expertise of the nation as a whole. In direct response to the needs for aquaculture industry development as identified in the National Aquaculture Development Plan, the regional centers work towards expansion of the commercial aquaculture industry.

They are distinguished by the specific involvement of industry in project planning and implementation.

The centers are administered by the Department of Agriculture and complement its existing research and extension programs. In the broadest terms, aquaculture is underwater agriculture, not a new science nor arcane enterprise. Like terrestrial farming, aquaculture requires substantial research and development support in order to expand its technical and economic base and realize its full potential.

Situated to take best advantage of regional aquaculture opportunities in the United States, the centers assist industry in developing regionally applicable production techniques. They are programmatic rather than institutional, seeking to become a center of information exchange and regionally-based research and education.

From 1982 through 1987, per capita consumption of seafood had grown an average of 5 percent a year. In 1988 this trend was halted as seafood consumption dropped from 20.2 to 19.8 pounds. Increased prices and food safety concerns, following several incidences of contaminated aquatic environments, contributed to the decline. Although the decline was experienced in consumption of commercial fishery products, aquacultural products remained relatively unchanged. Increased aquacultural production could only benefit the domestic seafood market by providing safe, high quality products at a lower price. The regional center program facilitates this growth by providing research and development support necessary to improve culture techniques.

The centers have been in full operation since 1987. The third year work plan, encompassing a variety of projects, was initiated on March 1, 1990. Continued support was provided for seven projects which are described below:

Aquaculture Effluent Discharge Program. The regulations concerning aquaculture effluent discharge in the state of Hawaii and other coastal states restrict aquaculture development. These restrictions were written before the advent of commercial aquaculture and producers have been forced to comply with regulations designed to safeguard against sewage and industrial waste disposal. In the project's first year, investigators identified, sampled, and characterized effluent discharge from aquaculture facilities in Hawaii. Investigators also determined that conventional water-quality treatment methods do not appear to provide a feasible means for meeting state discharge requirements.

Approval of Drugs to Treat Disease in Shrimp Hatcheries. This project was developed to identify, test and register likely drugs for the treatment of disease in domestic shrimp hatcheries. Significant project results include the FDA's policy not to regulate drugs used in shrimp larval culture. U.S. shrimp farmers will greatly benefit from this change in FDA policy.

Production of Aquaculture Seed for Guam and the Western Pacific Region. This project is supporting hatchery production of prawns, shrimp and rabbitfish seed for commercial producers in Guam and the Western Pacific. As a result of this project, four commercial farms, which had been closed for several years, received prawn seed and resumed operation in 1989.

Library Aquaculture Workstation. The Pacific Regional Aquaculture Information Service (PRAIS) was established and provides immediate access to aquaculture information for researchers and producers throughout the region.

Aquaculture Extension and Training Support. This project supports an aquaculture field agent to provide extension services, seedstock, and on-site training in giant clam aquaculture to five Pacific island nations.

A Market Study of the Pacific Giant Clam Products. In response to the growing expansion of giant clam aquaculture in the Pacific, this project is characterizing the market for giant clams in the U.S., Japan, Taiwan, Hong Kong and Australia.

Demonstration Projects for the Pacific Islands. Establishment of giant clam farms in American Samoa and the outer island atolls of the Marshall Islands and support of a small-scale commercial sponge demonstration farm are components of this demonstration project.

Introduction of Aquaculture to Secondary Schools in Hawaii and the American Affiliated Pacific Islands. This program is designed to introduce aquaculture to secondary schools in Hawaii and the Pacific, and to assist teachers in establishing aquaculture enterprises and research programs.

The scope and variety of these project demonstrate the breadth of CTSA's contribution toward development of the aquaculture industry. We believe even more of a contribution can be made nationwide by funding the regional centers at the fully-authorized limit of $7.5 million. We request your assistance and support for bringing the nation's aquaculture industry to fruition.

Thank you again for the opportunity to submit testimony.

The Chamber of Commerce of Hawaii

Testimony
before

Subcommittee on Appropriations
Agriculture, Rural Development and Related Agencies
March 1990

concerning

The Center for Tropical and Subtropical Aquaculture

Written Statement by

Mr. Robert B. Robinson
President of Hawaii Chamber of Commerce

My name is Robert Robinson. I am President of the Chamber of Commerce of Hawaii and Vice Chairman of the Industry Advisory Council of the Center for Tropical and Subtropical Aquaculture (CTSA).

As a businessman, I support the regional centers for their ability to make a substantial contribution to the nation's economic welfare. In 1987, the United States was the world's second largest importer of fishery products valued at $5.7 billion. By comparison, the United States exported $1.8 billion, suffering a $3.9 billion deficit. The regional center program provides an opportunity to turn these figures around. The allocation of resources into developing and improving domestic aquaculture would provide higher quality, lower cost fishery products. Under investment,

combined with growing world population and declining stock of capture species, could lead to higher prices and increased dependence on imported fishery products.

As a resident of Hawaii and a member of its business community, I have a vested interest in the successes of CTSA. Historically, Hawaii's economy has tended to rely on a few major industries: agriculture, tourism and the military. Although they still constitute a large share of state revenues, the major components of Hawaii's agriculture industry -- sugar and pineapple -- have reached a kind of economic stasis. Consequently, the state has begun to pursue new industries. One of these is aquaculture, which Hawaii considers an important new sector of diversified agriculture.

In the Pacific Basin, aquaculture development has been identified as a priority by territorial governments. A viable aquaculture industry will aide economic development by providing a potentially long-term sustainable enterprise, increase employment opportunities, improve nutrition among Pacific Islanders, and offer the potential for a significant export product.

It is no exaggeration to say that the resources of Hawaii and the Pacific Basin are extensive. We are fortunate in our climate and environment; seawater is obviously abundant and high value aquatic species can be grown year round. We have available to us extensive research and practical expertise in aquaculture through universities,

private institutions and the industry itself. CTSA integrates these resources and focuses their direction.

It is my hope that the activities and achievements of CTSA will continue and expand in the years to come. I urge members of the committee to fund the regional centers to their fully authorized appropriation of $7.5 million

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Testimony
before

Subcommittee on Appropriations
Agriculture, Rural Development and Related Agencies
March 26, 1990

concerning

The Center for Tropical and Subtropical Aquaculture

Written Statement by

Dr. Linden Burzell
Vice-President and General manager
Amorient Aquafarm
Kahuku, Hawaii

Thank you for the opportunity to submit testimony on behalf of the Center for Tropical and Subtropical Aquaculture, or CTSA. I am Linden Burzell, Vice President and General Manager of Amorient Aquafarm in Kahuku, Hawaii. I am also Chairman of the CTSA Industry Advisory Council.

Based on my years of experience in the aquaculture business and with aquaculture research, I can confirm the significance of an industry driven program. CTSA allows for and expects industry to provide research priorities and direction for regional aquaculture development. By recognizing the need to integrate industry priorities and scientific research, the Center insures a program that has direct applicability to commercial producers.

Through CTSA, I see Hawaii's resources and those of the Pacific Basin committed to a common goal -- development of a viable tropical and subtropical aquaculture industry. This development is taking many forms, addressing education, training, technology transfer, disease issues, government regulations, marketing and economics, and revitalizing or initiating aquaculture throughout the Pacific. Importantly, each of these developments has occurred in response to an industry need and tailored to industry priority.

A project to investigate aquaculture effluent discharge has provided private producers, government officials and research scientists with a common knowledge base to begin discussions on current discharge regulations and potential environmental impacts of aquaculture effluent.

A project to identify and test likely drugs for the treatment of diseases in shrimp hatcheries has had an enormous impact on the domestic shrimp culture industry. In May of last year, a member of the CTSA project work group received a letter from the Food and Drug Administration stating that FDA has adopted a policy not to regulate drugs used in shrimp larvae culture as previously required. The benefit that U.S. shrimp farmers will gain as a result of this change in policy cannot be understated. The FDA has conceded to the reality of the need for these compounds, the small size of the U.S. industry and the struggle of U.S. shrimp producers against the highly competitive foreign producers. These changes are a direct result of the efforts

of the CTSA project work group to educate government officials on shrimp aquaculture and disease control.

CTSA is proving to be a highly effective mechanism for industry development. Like any business in its infancy, the aquaculture industry has suffered its share of failures. To a degree, that is the nature of business--not everyone succeeds. But an organization like CTSA exists to ensure that everyone has a fighting chance.

My involvement with CTSA has been very rewarding both as a shrimp farmer and committee member. It is my belief that the regional center program will help guarantee the burgeoning success of aquaculture in America.

I hope to see the Center expand its current program and capabilities. The program's success in the area of drug approval during the past year demonstrates the value of the regional center program to the aquaculture industry. I therefore request that the committee fund the centers to the full authorized limit of $7.5 million.

Thank you again for the opportunity to testify before you.

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Dr. Gary Miller, President
Advanced Aquaculture Technologies, Inc.
Syracuse, Indiana

Thank you Mr. Chairman and Members of the Subcommittee for allowing me the opportunity to submit testimony before you on behalf of the Regional Aquaculture Center Program. Established in 1987, our company is a newcomer to the industry, providing bio-filtration design and management consultation and contract research, as well as food fish production.

Having been involved in regional promotion of aquaculture, development of aquaculture legislation in Indiana, and the establishment and leadership of the state aquaculture association, I have become painfully aware of the need for aquaculture extension and research activities in the north central region. Our part of the country does not have a well publicized history of the aquacultural activities for which other regions in coastal areas are known. That doesn't mean there hasn't been a viable industry or market demand sufficient to justify presence of the industry. Rather, more traditional agricultural activities in this region have been profitable enough to dampen interest in aquaculture as an alternative in farming systems. This no longer the case.

Our people are becoming increasingly concerned about contaminated water supplies and diminishing natural stocks of traditional fish supplies. Concurrently, the demand for fish

and seafood products is at an all time high and increases annually. Nationally, demand is expected to increase 30-50% by the year 2000. Importation of fish and seafood products is already the second largest contributor to our foreign trade deficit. Increased consumer demand will only worsen this situation.

There is much to be learned about the biology of species adaptable to aquaculture in the north central region. We also need regionally specific how-to information, refined diet formulations for our fish, capability to diagnosis of disease and information on medications, improved business management strategies and interstate legal cooperation in order to promote the orderly expansion of our aquaculture industry. I applaud your efforts in the creation and support of Regional Aquaculture Centers. I know of no better way to solve regionally specific and nationwide problems than through this program.

Mr. Chairman and Members of the Subcommittee, I respectfully urge you to support the Regional Aquaculture Centers at the full authorized level of $7.5 million. We have a tremendous amount of work to accomplish through these centers. The current reduced rate of funding spread across our 12 states is very small and restricts our accomplishments. The same is true in others regions. I urge you to distribute funds equally among the five existing regional centers. Although my personal interest is in the north central region, I recognize that the stronger the industry becomes nationally, the better the potential for the individual aquaculture business person. I thank you for your support of the Regional Aquaculture Center Program.

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Dr. Cal McNabb, Director
North Central Regional Aquaculture Center
East Lansing, Michigan

Thank you Mr. Chairman and Members of the Subcommittee for allowing me the opportunity to submit testimony in behalf of the Regional Aquaculture Center Program. I am director of the North Central Regional Center (NCRAC) that serves the industry and consumers in the States of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. We have spectacular water resources for aquaculture within our boundaries. These include U.S. portions of four of the five Great Lakes, and the rivers and streams that make up the Upper Mississippi, Missouri and Ohio River drainages. The 57 million people residing in this region are concentrated on these water bodies. They have had a long tradition of using fish as a major source of protein in their diets. Now, products of local cane-pole fisheries, high-tech sport fisheries and commercial fisheries have become health threatening sources of environmental contaminants. Aquaculture production, using our many water resources that are not contaminated, offers a great way to meet the demand our people have for a safe fish food supply.

As members of this committee well know, the fertile north central region of the country produces abundant grains and soybeans. These can be processed for fish feeds.

Significant quantities of fish products are used in the region as ingredients in feeds for traditional farm animals. North central residents purchased an estimated 900 million pounds of fish to eat in 1989. Only about 1% of that can be accounted for by production aquaculture ventures and commercial capture fisheries from our rivers and lakes. In 1988, U.S. foreign fish imports accounted for 56% of the nation's commercial fish supply. The Regional Aquaculture Center initiative, to which you have given your support, has programs underway that can tighten the loop of supply and demand, and by doing so, will contribute to reduction of the U.S. foreign trade deficit in fish products.

For people of the North Central Region, fish consumption is becoming more expensive. Midwestern members of the Subcommittee may have noticed that penetration of reasonably priced, good quality coastal fish products into our marketplace has diminished drastically in the past 10 years. At the same time, markets dealing in good quality fresh products from coastal fisheries have become fewer in number and remain only in large or moderately sized metropolitan areas. Because of prices, their clientele is limited largely to households in upper income brackets. Lower income groups are finding it increasingly more difficult to include fish in their diets. This is particularly unfortunate because of the superior nature of fish as a healthy food.

The aquaculture industry and related community of the North Central Region very much appreciates steps the Congress has taken to improve our fish supplies and reduce the U.S. trade deficit in fish products. We particularly appreciate your support of USDA's Regional Aquaculture Center Program.

The North Central Regional Aquaculture Center has existed for little more than two years. Each year, leaders in the industry step forward at the Center's request as members of an Industry Advisory Council. This Industry Council identifies problems limiting

profitability and development of regional aquaculture. Many of these problems are national in scope. The North Central Industry Council integrates its priorities with programs of other Centers and, in consultation with NCRAC's Technical Committee of aquaculture experts, selects specific problems for solution with each year's appropriation from the Congress.

After each year's priorities problems are selected, NCRAC sends notices of workshops to institutions throughout the region. Workshops are attended by extension specialists, scientists and economists from universities and State and Federal agencies who have expertise to work with the problems at hand. They form problem-solving teams and develop proposals for regional projects. Nationwide peer reviews of these proposals are conducted each year.

Using this cooperative approach between regional industry and institutions, and an integrated approach with other Regional Centers, NCRAC now supports work in four subject areas; (1) development of regional aquaculture extension information systems, (2) development of regional economic situation and outlook reports for the industry, (3) assessment of public policies regulating aquaculture, and (4) improvement of technology for culture of fish species adaptable for the region (hybrid striped bass, yellow perch, walleye, salmonids and sunfish). This work began in 1989. A total of 46 extension specialists, scientists and economists from 16 universities cooperate in these projects. Scientists and staff from three Federal Fish Hatcheries collaborate, as well as two commercial producers using their own facilities. In all, project activities are conducted in eleven North Central States. Results of this work will be available across the region, and across the country, through the strong ties that exist between NCRAC's programs, the National Coordinating Council for Aquaculture, and USDA's Cooperative Extension network.

Mr. Chairman, and Members of the Subcommittee, thank you for your support of the Regional Aquaculture Center Program. We are off to a good start. We must press forward

toward solutions of the industries' problems with projects that are now on-line. Solutions to other high priority problems await adequate financial resources. Among these other problems are disease control, development of integrated polyculture systems, discharge water quality management and recycling, innovations in fish product processing and packaging technology, and new product market development. Because of these needs, we respectfully request that funding at the authorized level of $7.5 million be provided for the Regional Aquaculture Center Program. We respectfully urge you to distribute funds equally among the existing five regional centers so that this important program can conduct the full range of activities necessary for development of the industry nationwide.

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

James W. Kahrs
Owner
Osage Catfisheries, Inc.
Osage Beach, Missouri

Thank you Mr. Chairman and Members of the Subcommittee for allowing me the opportunity to submit testimony before you on behalf of the Regional Aquaculture Center Program. My sons and I have operated as a family farm corporation since 1953, and now manage over 250 acres of water. We produce and market more than 20 species of fingerlings as well as food-size fishes. Over the years we have exported fry and fingerlings to Europe, Africa, Asia, and Central America, and we are currently assisting clients in New Zealand in their efforts to establish a catfish production facility.

Having been involved in the promotion of aquaculture at both the state and national level for over 30 years, I am acutely aware of the need for regional cooperation by government, universities, and the private sector to achieve needed recognition and support for aquacultural research and extension activities. If we are to meet the ever increasing demand for food and recreational fishes, we must realize an increase in producer numbers. But to achieve this objective, accurate how-to information and regionally applicable production techniques and training must be made available to beginning fish farmers. For the most part, the needed information exists in obscure publications and technical reports not readily

available in a user-friendly format. Just this last week, we held a 3-day introduction to fish farming seminar at our production facility. As far as we know, this is the only opportunity for hands-on training anywhere in the country. By fully funding the Regional Aquaculture Centers basic fish farming information can be refined and made available to an increased number of potential producers. Needed research with direct applicability to private producers will also be greatly enhanced through cooperative efforts directed by the Regional Aquaculture Centers.

Mr. Chairman, and Members of the Subcommittee, I respectfully submit that this program is of vital interest to the country and the aquaculture industry. I urge you to support funding the Regional Aquaculture Centers at the full authorized level of $7.5 million in order to carry out this needed and beneficial work. I don't feel that the industry would profit from establishment of additional centers. I respectfully urge you to spread the full authorization equally among the five Regional Aquaculture Centers that already exist. I thank you for your support of this program.

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Robert Baldwin
President
Michigan Fish Growers Association
Big Rapids, Michigan

I am Robert Baldwin, president of the Michigan Fish Growers Association. I am also the owner and operator of a private trout farm (Aqua Springs) in Michigan. From my own past business experience and from talking and representing the growers of this state, I submit testimony to day on behalf of the regional aquaculture centers.

My own interest in the developing aquaculture area goes back to 1969, and I have been following progress and developments in aquaculture ever since. I have been in the aquaculture business fulltime since 1979, primarily rearing coldwater species (trout). In the past few years I have begun to work with warm species as well (bass, bluegills, channel catfish).

Over the past 20 years in the developing aquaculture industry, I have seen it grow from a basic art form of culture practices to a more basic science program in the understanding of culturing practices. Today we understand more of the requirements that aquaculture systems require of operators, but still there is a great need in solving problems and working on techniques for high density culture systems. As we learn more about better culture practices, still other new problems will show up and need to be addressed.

Before the establishment of the North Central Regional Aquaculture Center, as an industry in this area of the country, we were dependent on whatever public information we could get from other parts of the country and were without an avenue to tap for many of our own problems in this region. Aquaculture in the north central region will be a growing agriculture industry that should not be overlooked, but supported that it may grow and help the nation reduce its foreign imports of fishery products. As the industry grows the need for research and information will grow. The aquaculture center in our region now serves as a center for information that is helpful and will greatly enhance our industry.

As an association point of view, Michigan fish growers have shown a need for research on alternate species other than trout (perch, walleye, salmon, etc.), development of marketing information and public advertising campaigns, development of potential alternate protein sources for feed formulas, continued research for therapeutic drugs, and registration programs and a regional certification program for maintenance of disease-free fish stocks.

Michigan Fish Growers Association works with the North Central Regional Aquaculture Center in tackling these problems and others that need addressing. We appreciate your past support of NCRAC and other centers in the country. It is our desire that you continue to fund the five regional centers equally and that funds for these centers be brought to the full authorization of $7.5 million. In doing this, I believe the Committee will find its money well spent.

Thank you for the opportunity to submit this testimony to the committee.

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Hugo Kettula
Owner
Seven Pines Fishery
Lewis, Wisconsin

I am Hugo Kettula, owner of Seven Pines Fishery, a family operated fish farm involved in the production of trout and some cool water species such as walleye and muskelunge. We have been in business since 1956. I have served on the Industry Advisory Council of the North Central Regional Aquaculture Center since it was founded by the Congress in 1988.

I am now secretary of the Wisconsin Trout Growers and past president of the United States Trout Farmers. Over the years we have worked to encourage aquaculture and gain recognition for the industry as a viable food producing group.

There is a tendency for greater consumption of seafood and fish as the American people are health conscious and recognize that omega 3 oils are beneficial. We recognize that the seas are being overharvested and some fish are contaminated due to pollution. Farm raised fish are reared under controlled conditions with monitoring of water, and fish food ingredients are tested to insure the health conscious consumers that the cultured fish are free of contaminants. Many state regulatory laws must be revised to provide expansion of aquaculture for production of contaminant free fish to consumers. The Regional Aquaculture Centers serve as focal points of activity to see that this is done.

In the North Central Region we have large areas of agricultural land that is of low value or has marginal production. At state rural development meetings that I attend, a large number of people present are interested in integrating aquaculture with agriculture to provide supplementary income and to reduce risks from crop failures. The 1990s will be explosive in the development of aquaculture technology. Programs of Regional Aquaculture Centers serve the needs that people will have for information to integrate aquaculture with traditional on-farm practices.

Predictions are that fish consumption will increase from 15 to 25 pounds per capita as we approach the year 2000. Producers in the north central region are close to the largest inland markets in the U.S. Chicago, for example, is a wholesale center for fish and a major distribution center with 25 million people within a radius of 150 miles. The North Central Regional Aquaculture Center is a very important program for developing production and marketing of fish in this area.

Research conducted in programs of the North Central Regional Aquaculture Center will lead to increased production and control of diseases. Improved diets that are less polluting will be developed, as well as improved genetic stocks of fish. Programs will help expansion of the industry to be well planned and orderly so that over and under development of regional supplies is avoided. Supplies of course are dependent on production on a national scale. Coordination that occurs with programs in other regional centers is a big plus in this regard.

I therefore urge you to support funding of the Regional Aquaculture Center Program. Many things need to be done. I urge your support at the authorized level of $7.5 million in order to provide for research and extension activities that are needed at this time in the five existing regional centers.

Testimony before

THE AGRICULTURE, RURAL DEVELOPMENT, AND RELATED AGENCIES SUBCOMMITTEE ON APPROPRIATIONS
March 26, 1990

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Dr. Kenneth K. Chew, Professor
Division of Aquaculture & Food Science, School of Fisheries and
Director, Administrative Center, Western Regional Aquaculture Consortium
University of Washington
Seattle, Washington

Mr. Chairman, and Members of the Subcommittee: I appreciate this opportunity to provide testimony on behalf of the Western Regional Aquaculture Consortium, one of five Regional Aquaculture Centers designated through the U.S. Department of Agriculture to encourage cooperative and collaborative research and extension education programs in aquaculture having regional or national application. As the Administrative Center Director for the Western Regional Aquaculture Consortium, I have seen in a short 3-1/2 years of the program, the growth of interest by all sectors related to the aquaculture community. Most revealing is the fact that the many governmental, state and local agencies as well as industry people are working together to develop a consensus of needs to encourage and promote aquaculture research and extension activities for the western region. As a result of this joint approach and consensus, several projects that have been developed that cross over into several states, addressing common problems that serve as an impediment and/or constraints to the production of aquaculture products. For example, the Western Regional Aquaculture Consortium is presently addressing six major research and extension projects covering a wide range of issues related to disease, broodstock development, nutritional requirements and alternate protein sources as feeds related to fish and shellfish, diseases, as well as shellfish sanitation. Industry's input, coupled with a well structured Technical Committee of the Consortium has made this program highly innovative and will no doubt result in

the development of solutions to various critical problems that face commercial aquaculturists, both in our western region and throughout the United States.

The five regional center directors are in communication with each other on a routine basis and meet at least twice a year to exchange ideas and regional needs. These directors constitute the National Coordinating Council. This council encourages close working relationships on projects that may cross regional boundaries involving two or more regions. Exchange of ideas and expertise between regions are positive features of the program as it continues to develop.

Continued support of the Five Regional Aquaculture Centers is critical to the development of aquaculture in the United States. The consumption of fish and shellfish products in the United States is continuing to rise and in order to meet these demands more seafood products are imported from foreign nations. Many of these imports are aquaculture products. Most developing countries abroad are moving at a very fast pace and encouraging aquatic animal and plant husbandry in some cases with governmental financial support and incentives. The establishment of the Regional Aquaculture Centers by Congress in 1986 provided greatly needed support for research and extension in a branch of agriculture which before had been largely overlooked. In the 3-1/2 years of this coordinated program, we are already beginning to see significant results from projects that will greatly help the developing aquaculture industry.

Expansion of aquaculture in the United States is expected to grow significantly each year. Thus, much of the research and extension activities associated with the Regional Aquaculture Centers will have very broad and supportive implications to the nation and its economy. It is my hope that the Western Regional Center as well as the other centers receive the support needed to continue to address solutions to various critical problems that face the commercial aquaculture industry both in our region and throughout the United States.

Mr Chairman and Members of the Subcommittee, I sincerely urge you to support the funding of the five Regional Aquaculture Centers to the full authorized level of $7.5 million.

Thank you for giving me the opportunity to submit this testimony.

Testimony Before

THE AGRICULTURE, RURAL DEVELOPMENT, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS
March 26, 1990

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Bill Dewey
General Manager, Rock Point Oyster Company
Bow, Washington

I am Bill Dewey, General Manager of Rock Point Oyster Company, Inc. I also have a Bachelors degree from the University of Washington School of Fisheries and am President of the Pacific Coast Oyster Growers Association (P.C.O.G.A.). In addition, I serve as a member of the Industry Advisory Committee for the Western Regional Aquaculture Consortium. I have been involved in farming shellfish since graduating from the School of Fisheries in 1981. I submit testimony today on behalf of the Regional Aquaculture Centers.

Graduating from college with a strong interest in shellfish culture and applying it for the past nine years, I have a deep appreciation for the importance of current research. We in the industry need the help of the universities to assure us that practical research is performed that is regionally significant; that the results of this research are available to us; and that similar research effort is not duplicated around the country.

The Western Regional Aquaculture Consortium as well as the other Aquaculture Centers around the country provide this service for us. Thanks to contributions from the western universities, the shellfish industry in the Pacific Northwest is the most technologically advanced in the world.

As a member of the Industry Advisory Committee I have an opportunity to assist in setting research priorities form the viewpoint of private enterprise. It is this input which will allow our shellfish industry to stay in the lead technologically.

Thank you for the opportunity to testify on behalf of the Western Regional Aquaculture Consortium. It is my hope that this Center as well as the others will receive the support necessary to continue this important work. I sincerely urge the Committee to support the funding of the five Aquaculture Centers to the full authorized level of $7.5 million.

ZEIGLER

ZEIGLER BROS., INC. • P.O. BOX 95
GARDNERS, PA 17324-0095 • 717-677-6181
TWX 510-657-4633 • FAX 717-677-6826

March 15, 1990

The Honorable Jamie Whitten, Chairman
House Subcommittee on Rural Development
Agriculture Related Agencies
Room 2362
Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Whitten:

The following testimony is presented in support and continuation of the Regional Aquaculture Research Centers as sponsored and directed by the U.S. Department of Agriculture.

My present position is President of Zeigler Bros., Inc. of Gardners, Pennsylvania. Our primary business can be defined as a manufacturer of specialty animal feeds. We have been in business for 55 years and have been supplying the aquaculture industry for a period of approximately 30 years. Aquaculture products make up approximately 75% of our total volume. We manufacture and distribute aquaculture feeds and fish farming equipment both nationally and internationally.

Personally I spend approximately 80% of my time in aquaculture related activities. I have traveled to most of the developed aquaculture nations and also countries developing aquaculture programs. Currently I serve as either an officer or director of 4 regional, national and international aquaculture organizations.

We support the Regional Aquaculture Research Center program for two important, very basic reasons. 1. Aquaculture will develop into a very large and most significant agricultural industry in the future. Our country needs to invest now to assure the profitability of the U.S. aquaculture industry and to maximize the opportunity for economic development of the U.S. based support industries. 2. The United States, once the leader in aquaculture technology, has lost its position to other countries of the world namely Japan, Norway, Canada and England. Because of the importance of aquaculture in global market in the future, our country needs to reestablish its leadership base in all areas of the industry but especially in the technological and marketing aspects.

We identify the following strengths and benefits of the Regional Aquaculture Center Program as follows:

- The mission of the center specifically directs the research and development activities to the profitability of the aquaculture industry as opposed to basic research where the pay off is long term. Research and development that leads to increased profitability on short term basis is a critical priority of the industry.

- The regional centers form a tangible focal point around which the regional needs can be identified and addressed. The program is both small enough yet large enough to be effective. The organization is good and should be continued as is.

- The centers, due to their organization policy, forces interaction between the key segments of the industry, namely government, academic, research and industry. This cooperation and dialogue we believe will lead to faster and more effective benefits to the industry from the program. It is extremely important that a strong voice from industry be maintained. It is also important to maintain communications with aquaculture development and needs outside of the United States.

- The program also mandates that there be a strong extension component. The aquaculture industry currently suffers from a lack of grassroots knowledge concerning aquaculture and also effective vehicles to communicate the practical and commercial benefits of ongoing research and development to the industry. This extension component will cause these communications to occur and greatly benefits the industry.

- The program mandates that research and development projects be made up of research teams comprising several institutions and agencies. Industry can also be included. This requirement will provide more meaningful and better quality research which will have greater benefits to the industry.

- The system is in place and is working. It needs the time and continued support to yield the results which have been projected.

It is our evaluation that the benefits from the Regional Aquaculture Research Center Programs will provide economic benefits to the businesses in our country through profits and also to a reduction of trade deficits of edible fishery products. We believe that monies expended now are not lost but in reality are an investment which will yield economic benefits greater than the cost.

We urgently recommend that Congress act favorably on the Regional Research Center Program and continue its support both financially and administratively at a level no less than is currently in place.

Very truly yours,

ZEIGLER BROS., INC.

Tom Zeigler

Thomas R. Zeigler, Ph.D.
President

TRZ/aab

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATION
MARCH 26, 1990

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Dr. Henry S. Parker, Director
Northeastern Regional Aquaculture Center
Southeastern Massachusetts University
No. Dartmouth, Massachusetts 02747

Mr. Chairman and members of the Subcommittee: Thank you for providing the opportunity to present testimony in behalf of the Regional Aquaculture Centers. We very much appreciate the vital support that you, your Subcommittee, and other members of Congress have given to the aquaculture industry in general and to the Regional Aquaculture Centers Program in particular.

The U.S. Congress had a vision when it established five Regional Aquaculture Centers under the leadership of the U.S. Department of Agriculture through Title XIV of the Agriculture and Food Act of 1980 and the Food Security Act of 1985. Congress recognized that aquaculture is agriculture - in an aquatic, rather than terrestrial, environment. In establishing the centers, Congress provided the mechanism for regional leadership of collaborative research, development, and extension education efforts to enhance the U.S. aquaculture industry.

We are asking that funding for the five Regional Aquaculture Centers be brought up to at least $7.5 million annually - the level authorized by Section 1475 (d) of the authorizing legislation. To date, appropriated funding has been only half this amount or less. Without adequate funding, the Centers will not be able to realize their potential to stimulate the U.S. aquaculture industry.

The need for enhancing the U.S. aquaculture industry has never been greater. U.S. consumer demand for fisheries products grew at a rate of five per cent per year from 1982 to 1987, with per capita consumption reaching record levels of 20.2 pounds in 1987. 1988 saw a slight decline to 19.8 pounds, apparently because of rising prices and consumer concerns about contamination of wild-harvested products.

Wild supplies of fish and shellfish are not keeping up with demand. Severe overfishing and pollution of wild stocks have forced the U.S. to import billions of dollars worth of edible fisheries products - over $2.7 billion in the first half of 1989 alone. U.S. imports of fisheries products more than doubled during the 1980's. This has contributed to a U.S. trade deficit of over $6 billion for all fisheries products. Only oil imports contribute more to the U.S. trade deficit for natural products.

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U.S. aquaculture production has grown substantially in the past decade with aquaculture being the fastest growing segment of the U.S. agriculture industry during the 1980's. Yet the potential is much greater. As wild stocks continue to disappear because of overfishing, demand will increase for farmed crops of fish and shellfish. Aquaculture, carried out under rigidly controlled conditions, can provide safe, high quality products for consumers concerned about disease and contamination of naturally produced seafood. Already, other countries are flooding American markets with cultivated fish and shellfish - notably Atlantic salmon farmed in Norway. With the right support, America can produce ample supplies of its own seafood. To provide perspective, Taiwan, a tiny country compared with the U.S., produces nearly 70 percent more aquaculture products than we do.

How can the U.S. aquaculture industry achieve its full potential to reduce our dependency on expensive imports, create jobs, and improve our economy? Prior experience with other segments of the agriculture industry point to the vital importance of applied research and extension. Scientists and extension agents, working closely with industry, can develop genetically superior crops, improve disease resistant strains, better nutrition, increase growth rates and survivability, and contribute to better understanding of marketing and economic issues of the industry.

The Regional Aquaculture Centers Program is an ideal mechanism to accomplish this, because it mandates that regional research, extension education, and demonstration be closely tied to industry needs and that the results are directly, and quickly, transferrable to industry. The Program requires a multi-state, multi-institutional approach to problem-solving. Not only do the region's most capable researchers and extension agents work cooperatively on a project, but also the pooling of resources among institutions enables the accomplishment of objectives which no single institution could achieve on its own.

This cooperative, collaborative approach is paying off as exemplified by several promising projects supported by the Northeastern Regional Aquaculture Center (NRAC) which is responsible for the states of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Delaware, Maryland, West Virginia and the District of Columbia. Examples of NRAC-supported projects include the following:

1. "Genetic Improvement of the American Oyster, Crassostrea virginica for Commercial Culture in the Northeast." Four state universities and two commercial shellfish companies. The primary objective is to further develop and test triploid strains of MSX disease-resistant American oysters for commercial culture in the U.S. The MSX disease has devastated American oyster crops in the region, contributing substantially to an extraordinary decline in the region's oyster production over the past three decades. The project is in its second year.

2. "Genetic Manipulation of Oysters through Hybridization and Polyploidy." Three state universities. Designed to complement and build upon the previous project, this project focusses on the production and testing of interspecific polyploid hybrid oysters, significantly expanding the potential for genetic improvement of hybrids. Approved by NRAC; scheduled to begin in 1990.

3. "Increasing Aquaculture Production in the Northeast through Nutrition." Nine universities and research institutions in seven northeast states. The primary objective is to develop and test lower-cost, nutritionally-adequate alternative diets for salmon, striped bass, and hybrid striped bass. Since feed costs represent the major production cost for farmed fish (close to half the production costs of salmon, for example), breakthroughs resulting from this project will be of significant economic benefit to the industry. Approved by NRAC; scheduled to begin in 1990.

4. "Analysis of the Economics and Marketing of Farmed Finfish in the Northeast." Three universities in three states. The principal objectives are to characterize the current status and trends of finfish aquaculture industries in the Northeast; to determine the production costs for freshwater striped bass and hybrid striped bass operations and ocean pen-reared salmon culture operations in the Northeast; and to conduct a market analysis for farmed salmonids, striped bass, and hybrid striped bass, as well as to suggest marketing strategies which will best maximize profits in the 1990's, when competition is expected to increase considerably. The project is in its second year.

Mr. Chairman, I hope that this testimony gives an indication of the importance of the Regional Aquaculture Centers Program to the further development of the U.S. aquaculture industry. We respectfully request that the annual funding for this important program be brought up to the authorized level of $7.5 million so that the program's potential can be realized even more.

Mr. Chairman and members of the Subcommittee, thank you for your continuing support of the National Aquaculture Centers Program and for the opportunity to submit our testimony.

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATION
MARCH 26, 1990

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Thomas C. Field, Ph.D., President
Fernwood-Limne, Inc.
77 Route 9
Gansevoort, New York 12831

I want to take this opportunity to provide written testimony regarding the funding of Regional Aquaculture Centers. I am a commercial aquaculturist in New York State, and have been in the business of raising trout and salmon since 1973. Since that date, I have seen many changes in aquaculture, most of which have occurred during the last five years as people have become aware of the opportunities aquaculture offers for producing food products. Despite the opportunities, the growth of aquaculture has been seriously hampered by a variety of technological and political barriers that can only be overcome with the help of government.

To this end, Congress wisely authorized the formation of regional aquaculture centers, and authorized $7.5 million for their funding. We in the aquaculture business appreciate this effort and wish to thank you for your support. Only approximately half the authorized money has been appropriated for the centers' budgets, however, and this has diminished their effectiveness in stimulating commercial aquacultural development.

At the same time, the demand for aquacultural products continues to rise, as does our importation of foreign aquacultural products. Concurrently, the growth of commercial aquaculture in the Northeast has been curtailed, in part for a lack of services that the Centers should provide to initially stimulate aquaculture development, e.g. an analysis of markets in the region and production of base-line production data that are useful in planning aquacultural ventures.

While research projects in these areas are finally in progress in the northeast, other critical areas of need have been neglected for lack of funding. As an example, the need for fish health management research was rated extremely important by commercial aquaculturists in a query by the Northeastern Regional Aquaculture Center (NRAC) in 1988, yet no project in this area has yet been funded in the northeast. This research area alone deserves a great deal of funding, and until an extensive research effort has been expended, aquacultural loses due to diseases will remain high for many species. Another identified but unaddressed research area in the northeast has been aquaculture systems technology, and despite the essential need for economical pollution control systems and better recirculation technology, no projects in this area have been funded to date either.

The projects that NRAC has funded have been helpful to the industry, and essential to our growth. For oyster culturists, whose industry is badly depressed because of MSX disease, the Genetic Improvement of the American Oyster for Commercial Culture in the Northeast project is critically important and now achieving some positive results. Until MSX resistant oysters become available, revival of harvestable stocks is simply impossible since non-resistant strains do not establish harvestable populations in the presence of the disease. In addition, the shellfish industry needs a human fecal specific indicator system to replace the fecal coliform system as a means of detecting waters unsafe for shellfish harvest, and a project toward this end has recently been funded.

Finally, in the area of finfish culture, the Economics and Marketing of Farmed Finfish in the Northeast will for the first time provide a picture of commercial aquacultural activity in the northeast. With this document in hand, commercial aquaculturists will no longer be blind to the common opportunities and problems in the northeast, and will be better able to interact with NRAC to formulate research and extension needs of our industry. Without more extensive funding of NRAC, however, these problems and opportunities will not be efficiently confronted, and the growth of aquaculture in the northeast will continue to be curtailed.

Thank you for the opportunity to provide you with this testimony.

Fresh - Culture Systems, Inc.
12 Peach Street Kutztown, PA 19530

Support for the Regional Aquaculture Centers

A Historical Perspective

To promote the development of the aquaculture industry, the federal government passed the National Aquaculture Act of 1980 and the National Aquaculture Development Plan of 1982. A report to congress from the USDA and the Departments of Commerce and Interior in 1983 strongly touted the potential for increased aquacultural production in the United States, and stated that the biggest constraints were "political, administrative and economic". However, over the next three years, the most relevant action taken by the federal government was to direct the main responsibility of aquaculture development to the individual states. The future of the National Aquaculture Act, and the role of the federal government in coordinating a cohesive national policy for addressing aquacultural problems and research needs became increasingly precarious. Without the guidance of a national policy, the success of such a de-centralized approach would be spotty and unsure at best.

In recent years government interest in aquaculture has grown, as has concern over the U.S trade imbalance in fish and fish products. Fisheries products are the only food and agricultural commodity in which the U.S. has a significant trade deficit. Contributing to this long-standing deficit are the facts that yields from traditional fishing vessels have not kept up with the increasing U.S. demand for seafood products. Meanwhile, the growth of the U.S. aquaculture industry has been limited. Congressional experts predicted that the imbalance would grow at an alarming rate unless concerted action was taken, looking to the enhanced development of aquaculture to positively affect the fishery trade deficit.

It became vitally important that the directions of the industry be carefully set. In response, the Regional Aquaculture Centers were created by legislation, with congress appropriating $3 million dollars for the purpose of conducting aquaculture research, and encouraging the growth of a domestic aquaculture industry which will benefit producers, consumers and the American economy. Besides these general goals, it was the intent of the Centers to:

- act as mechanisms for the regional assessment of needs and opportunities and the establishment of priorities.
- ensure the integration of research needs assessment and results between the research community and industry through extension programs.

- complement and utilize existing institutions and programs in the region to implement research and extension priorities
- foster cooperation and collaboration among the diverse institutions and organizations currently involved in aquaculture
- provide a nucleus for information exchange
- encourage participation of private industry and public and nonprofit institutions in center programs
- coordinate interregional and national programs

To accomplish these goals, each Center was directed to focus on the needs and development of its own region. As ambitious and costly as such an approach is to implement, the ultimate success of the expanding aquaculture industry is wholly dependent on the accomplishment of each of these priorities.

As always, the antagonistic concerns of desired accomplishment and available budget endanger the relative success of this program. While the Centers have been authorized to receive $7.5 million this fiscal year, only $3.75 million have been appropriated. The additional funding must be made available if the expected results are to be achieved. As with all worthy objectives, it is not possible to achieve a productive harvest without appropriate levels of nourishment.

The Northeast Regional Aquaculture Center

The course that has been set by the aquaculture industry, while providing one of the only recent bright spots in the field of agriculture, is limited by a number of factors. To date the vast majority of freshwater aquaculture in the United States involves either the culture of catfish or trout. These disciplines have been elevated by scientific research and private innovation to pinnacles of productivity unrivaled within the limitations of geography and their prospective culture methods.

But the operating costs of large-scale extensive culture operations have increased drastically. Water availability and quality are falling victim to overuse and pollution. The demand for high quality protein is increasing, while the principle supply of seafood, our fishery harvests and imports, are becoming increasingly scarce and expensive. The vast majority of aquaculture in the U.S. is limited to areas where commercial systems such as catfish ponds (in the Mississippi delta) or trout raceway

systems (in Idaho) provide enough water resources and climatic conditions to support these methods of fish culture.

For the aquaculture industry to expand throughout the country, it is necessary to diversify this base. The climatic and resource dependent methods presently used must be augmented by a variety of culture methods adapted to new locations. A fine line separates profit from loss in this industry, under the most optimal of culture conditions. That line can be breached by changes in energy costs, the enforcement of wastewater release standards, disease problems, increased feed costs and of course consumer demand and perception. In other words, it is impossible to use delta catfish production techniques in the northeast U.S. While new production methods here will provide incentives for the growth of the overall industry, they must take into account a whole new set of problems.

Within the next 10 years, clean water will become a precious and endangered resource. Rigid anti-pollution laws will be enforced. Fishery imports will continue to compete with domestic production. And for aquaculture to expand in the region, production will have to go hand-in-hand with the research and development of culture techniques that address these constraints. The industry will expand in the Northeast only through new innovations in water conservation using reuse and pollution abatement technologies, the exploitation of new species of fish through education and innovative marketing strategies, the promotion of energy efficiency and the implementation of co-generation techniques, and the development of high-intensity environmentally controlled designs.

To develop an aquaculture strategy which is accountable to these demands will require extensive research and education. While the potential for the expansion of the industry exists now more than ever before, the environmental requirements peculiar to the Northeastern United States demand a cohesive national policy which is supported by funds in proportion to the urgency of its implementation.

Steven D. Van Gorder
President
Fresh-Culture Systems, Inc.

Aquacultural Research Corporation

March 12. 1989

Honorable Jamie L Whitten. Chairman
House Sub-Committee on Rural Development
Agriculture and Related Agency Appropriations
Room 2362
Rayburn House Office Building
Washington. D.C. 20515

Dear Chairman Whitten:

Aquacultural Research Corporation (ARC) fully supports the continuation of funding for the USDA Regional Aquaculture Centers. The regional centers were established by Title XIV of the Agriculture and Food Act of 1980 and the Food Security Act of 1985 to develop five regional aquaculture research. development and demonstration centers in the United States (Subtitle L. Section 1475.d) in association with colleges and universities. State Departments of Agriculture. federal facilities. and non-profit private research institutions. The authorized limit for funding the Regional Centers is $7.5 million. Our present appropriated level of funding is $3.75 million distributed $750.000 to each of the five Centers. ARC strongly recommends the need for increasing funding to the authorized level and this support will be for the five existing centers.

ARC is currently participating with the Northeast Aquaculture Center at Southeastern Massachusetts University in a project involving the American Oyster.This project's goal is to develop an MSX-resistant oyster for the Northeast. This disease is decimating the oyster populations on the East Coast and oyster growers and baymen have been heavily impacted. The economic ramifications are widespread. As noted in the project proposal: "In 1880, when the U.S. Government began keeping records of oyster landings, the states from Maine to Maryland produced about 104 million pounds of oyster meats. By 1986, this figure had fallen to 8 million pounds." This project is currently entering its third year and is being expanded to include additional commercial oyster growers from the states of Delaware, New Jersey, New York. Connecticut and Massachusetts. In addition the states of Maine, Maryland, New Jersey and Delaware are involved in the development of both fast growing. disease resistant American oysters as well as novel oyster strains developed by polyploid techniques.

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Two other research projects funded by the Northeast Aquaculture Center are in there second year and are having immediate impact on the emerging finfish aquaculture industry in the Northeast. One project involves development of culture techniques for hybrid stripped bass in the Northeast and the other project has done an economics analysis of the existing finfish aquaculture in the Northeast.

Currently, 4 projects have been funded for FY89-90 that will further assist the Northeast aquaculture industry in the areas of finfish nutrition, government regulation, genetic manipulation of shellfish and aquaculture extension programs. All four projects offer the potential to improve aquaculture in the United States. It is these types of regional, multidisciplinary projects that are needed to continue to promote efficiency of research funds and to avoid duplication of research and extension efforts. In addition, the projects have input and review from university, extension and industry personnel so that practical well integrated projects are funded.

ARC is a private corporation considered one of the largest in its field. We have 25 year round employees involved in the production of shellfish. We believe the Regional Aquaculture Centers funded by USDA should greatly impact formation and expansion of shellfish and finfish aquaculture in the United States and urge your support for the continued funding of these five regional centers at the authorized funding limit of 7.5 million/year.

Sincerely,

Richard A. Kraus
General Manager

March 8, 1990

The Honorable Jamie L. Whitten, Chairman
House Sub-Committee on Rural Development, Agriculture
and Related Agencies
Room 2362
Rayburn House Office Building
Washington, DC 20515

Dear Chairman Whitten:

I am writing in support of funding the Regional Aquaculture Centers to the authorized level of $7,500,000 from current levels of approximately half that amount. I am writing in support of that funding as the President of the largest salmon aquaculture company in the United States with operations in the state of Maine.

The U.S. salmon aquaculture industry essentially replicates technology and systems developed in Norway. We are a young industry - less than ten years in existance - and have tremendous needs in terms of refining the Norwegian technology to be appropriate to the coastal sites where we raise our products in the U.S. We look to regional aquaculture centers, as well as other personnel at the U.S. Department of Agriculture, to assist our industry in areas of technology where their agricultural experiences have been of great benefit to the beef, poultry, pork and other protein producers in the United States.

Our industry needs to benefit from the accumulated knowledge of genetics, animal diseases, nutrition, growth and marketing which could be transferred in some part through the aquaculture centers, as well as through agriculture Extension personnel.

The seafood industry is presently a significant contributor to the unfavorable balance of trade. Over two-thirds of the seafood consumed in the U.S. today has been imported. The opportunity exists through aquaculture in the United States to make a major impact upon those import levels and in a very quick timeframe.

My experience with the Northeastern Regional Aquaculture Center has been positive. I have found them willing and, in fact, expecting the private sector to participate in identifying the research needs of aquaculture. I find that altogether too often the private sector is not included in deliberations which affect its success or survival.

Finally, Mr. Chairman, as an industry, the aquaculture community supports the naming of the United States Department of Agriculture as the responsible agency for conducting mandatory seafood inspections of its products. We have been in

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favor of mandatory seafood inspection for many years and are encouraged by the current HACCP program development, and how it might constitute the basis for inspection of our products.

Respectfully yours,

Wallace R. Stevens
President

WRS/ab

TESTIMONY

THE AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATION
March 26, 1990

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

Written statement by

Leo E. Ray
Fish Breeders of Idaho, Inc.
Buhl, Idaho

I am Leo Ray. My wife and I are the owners of Fish Breeders of Idaho Inc.. I am a member of the Aquaculture Industry Advisory Council of the Western Regional Aquaculture Consortium. I am a past president of the U.S. Trout Farmers Association and a past president of Catfish Farmers of America. I am currently chairman of the Idaho Aquaculture Industry Committee. I was fortunate while in college to have the experience of working on some of the original research that led to the development of the catfish industry. I built my first catfish farm at Nilan, California. I presently grow and process catfish, Tilapia and rainbow trout in Idaho. My 22 years as a fish farmer have given me valuable experience, the results of which I will share with this committee.

Aquaculture has been the fastest growing segment of agriculture in the 1980's. However, aquaculture has only begun to grow. Aquaculture will offer more opportunity than any field of agriculture in the 1990's. It is a field that required dedication, hard work, a lot of energy, education and experience. It offers more opportunity for young people entering agriculture than any other field.

The need for research in aquaculture is enormous. Before establishing the five regional aquaculture centers, research for the commercial trout industry was almost non-existent. The Western Regional Aquaculture Consortium selected five areas to concentrate their research. Last

fall two discoveries resulting from WRAC funded research were announced, the cause of soft shell eggs in salmonids and a vaccine for the I.H.N. virus. Each of these discoveries will save the trout industry alone more money yearly than the federal government has spent on WRAC.

A member of our industry, who historically has been opposed to government funded research, attended the first WRAC meeting. He attended anticipating WRAC would be another waste of government money. His main reason for attending the meeting was to express his dissatisfaction with the intent of the program. The results of WRAC have changed this individual's appreciation of university research. Last fall this individual requested that all federal aquaculture research money be directed to the five regional aquaculture centers. The trout industry is getting more good form this research than any money the government has ever spent on trout research. This is the overall feeling of the western aquaculture industry to WRAC. The returns we are receiving on the investment are of tremendous value to industry.

The Land Grant Colleges and their Extension programs have been in place supplying excellent research and extension to agriculture. Aquaculture was excluded form this excellent system. The five regional aquaculture centers are filling this void. This funding has allowed the Land Grant Colleges to establish aquaculture programs. The tremendous success WRAC has obtained is because of the enormous void filled that existed for research --quality research obtained by drawing together the top researchers in the concentrated fields and strong guidance from industry. This system is the way to success.

New people entering aquaculture need a source of technical information to assist in solving their problems. With few exceptions these people must depend on their competitors for that information. Developing an aquaculture extension system around our Land Grant Colleges will make that needed information available to people entering aquaculture.

Only oil exceeds fish as a natural resource import. The development of aquaculture in the U.S. will offset this drain of dollars out of this country. We have the potential to lead the world in production of aquaculture products like we lead in other agriculture products. All that is needed is the research to build the industry and the extension program to transfer this information to the farmers. The phenomenal growth of the catfish industry is only one example of the potential that exists.

In business I find I must spend money to make money. The same is true with government. Government must supply research money if it hopes to create new industries and expand those industries into tax paying businesses. There are few areas where government can spend money and have greater returns on its investment than aquaculture. WRAC has proven it is the avenue for aquaculture research.

If there is concern with the expenditure of money, think of the tremendous dollars the catfish industry is now paying in taxes. Money invested in catfish research has been a very good investment for the government. Full funding of the five regional aquaculture centers will produce the same returns in other species.

I urge Congress to fund the five Regional Aquaculture Centers to the maximum authorized limit.

Thank you for the opportunity to testify before this committee.

Testimony before

THE AGRICULTURE, RURAL DEVELOPMENT, AND RELATED AGENCIES SUBCOMMITTEE ON APPROPRIATIONS

concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

written statement by

Richard P. Harris
Vice President - Natural Resources
Sealaska Corporation

Honorable Chairman and Subcommittee Members: I would like to introduce myself. I am Richard Harris, Vice-President for Sealaska Corporation, a natural resource-based regional corporation established pursuant to the Alaska Native Claims Settlement Act. Sealaska, in recognition of the value and potential of mariculture as an extremely promising area of economic development, has invested in a venture known as Swecker Salmon Farms. I am the owner representative in the partnership.

Because of a strong personal and professional commitment to aquaculture, I have maintained an active presence and involvement in public policy development since 1972. I was one of the founding directors of the Alaska Mariculture Association and now serve as the Chairman of the Industry Advisory Council to the Western Regional aquaculture Consortium (WRAC), one of the five Regional Aquaculture Centers involved in cooperative and collaborative research and extension education programs.

In authorizing the establishment of these centers in 1986, Congress provided greatly needed support for research. The Western Regional aquaculture Consortium now sponsors a wide range of projects which address issues related to diseases, broodstock development, nutritional requirements, alternate protein sources, and shellfish sanitation. The results from their studies are very encouraging for aquaculture.

In the western region, the Center has successfully established priorities in research, demonstration programs and approaches to resolve public policy issues effecting the aquaculture industry. Simply, the Regional Centers have created an organized, systematic program for problem identification and formulated strategies for problem solving thereby furthering the regional and national aquaculture industry. This systematic and coordinated approach to solving problems which constrain the advancement of the aquaculture industry would not have occurred without the Regional Centers.

Mariculture represents a significant economic opportunity at the state, national and international levels. An international examination of the explosive growth of aquaculture and mariculture shows that its potential as an industry cannot be ignored. Just a few years ago, over 10% of the world supply of seafood is from mariculture. Recent estimates for aquatic farmed products is over 13 million metric tons worth $19 billion.

Sealaska is particularly interested in research, development, and demonstration projects which address issues important to commercial aquaculture. We wish to applaud Congress for its foresight in passing legislation establishing a national aquaculture policy and for creating the Regional Centers. These strategic decisions have already provided significant benefits which will be enhanced in the future. The United States cannot afford to ignore those potentials.

My commitment and continuing interest in this industry is fueled by the knowledge that through the aquaculture industry there is also the potential to realize other social objectives, such as by creating employment opportunities in disadvantaged and/or rural areas. In Alaska, the mariculture industry will stabilize regional economies and provide new job opportunities.

The success of the aquaculture industry requires a close relationship between State and Federal governments, universities and other research organizations and the aquaculture industry. The Regional Centers have become a significant contributor to establishing a foundation for which cooperation and

collaboration between industry, university research and extension programs can occur. The Centers have already proven successful for the first time in bringing aquaculture scientists, extension representatives and the industry together. The Centers have facilitated a sharing of knowledge, experience and discussion of critical issues and needs has occurred.

Ancillary to this direct benefit is the improved networking between the various segments of the aquaculture industry within a region and between geographic regions. The National Coordinating Council (NCC) of the Regional Centers has also created a vehicle for the sharing of information across vast geographic areas. This sharing of experience, research and priority will in the future provide national coordinating that will further coalesce the United States aquaculture industry.

Mr. Chairman and Members of the Subcommittee, I wish to thank you for continuing interest in the aquaculture industry and strongly urge you to support the funding of the Regional Aquaculture Centers to the full authorized level of $7.5 million.

Testimony Before

THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES SUBCOMMITTEE ON APPROPRIATIONS MARCH 26, 1990

Concerning

SUPPORT FOR THE REGIONAL AQUACULTURE CENTERS

Written Statement By

MR. LESTER W. MYERS, PRESIDENT AND GENERAL MANAGER, DELTA WESTERN, INC. INDIANOLA, MISSISSIPPI

Thank you, Mr. Chairman, for the opportunity to present testimony on behalf of the Regional Aquaculture Centers. My name is Lester Myers. I serve as President and General Manager of Delta Western, Inc., Indianola, Mississippi, the largest catfish feed mill in the United States, and am also involved in catfish production near Inverness, Mississippi.

For the past three years, I have also served as Chairman of the Industry Advisory Council for the Southern Regional Aquaculture Center. Along with hundreds of aquaculture producers in the Mid-South, our Mississippi producers depend heavily on information from research and extension scientists throughout the country. This industry has reached its current status because of innovative efforts from these aquaculture scientists. Taken collectively, producers, feed mills, processing plants and other segments comprise a catfish industry now valued at more than a billion dollars. My comments reflect the opinions of the increasing number of production and processing representatives who vitally need additional scientific information to keep this valuable industry viable and growing. U.S. aquaculture production can provide a significant portion of finfish and shellfish required by our country's consumers.

The Regional Aquaculture Center concept offers an effective and now proven organizational structure to coordinate research and extension efforts throughout the nation. Their programs have already provided very useful results. For example, the catfish industry, which constitutes approximately one-half of the private aquaculture production in the U.S., must deal with frequent fluctuations in supplies and market demands. A research bulletin identifying demographic and attitudinal characteristics of catfish consumers has just been published from one of the Southern Region's first projects. Additional and valuable information regarding seafood demand and usage is being prepared using results obtained from this marketing/ economics study. Data collected from this project will be used by many segments of the aquaculture industry for years to come.

From another Southern Region project, scientists have completed more than 40 publications and four videos regarding production practices for several species common to our Region. Also, scientists from five states working on an aeration project are continuing to develop techniques to improve water quality for trout, crawfish and catfish production. In addition to major concerns for improved environmental conditions, maintaining good water quality is one of the most serious production problems facing aquaculture today.

Research and extension efforts have been most valuable to aquaculture. Even so, significant problems still face this capital-intensive industry. Techniques for improved nutrition, reduced production costs, control of off-flavor, and disease and parasite problems are critically needed in order to maintain the high quality of cultured aquacultural products. Prevention of pollution and contamination in aquaculture environments dictate a continuous need for effluent quality control.

One of the major benefits we continue to see from programs of the Regional Centers is the excellent opportunity for industry inputs in determining priorities and helping select projects to solve our problems. In addition to producers, there are representatives from feed mills, processing plants, financial institutions, and State Departments of Agriculture serving on the Industry Advisory Councils. These segments comprise the backbone of the aquaculture industry.

The 1988 on-farm value of U.S. private aquaculture production was greater than $650 million, and with proper technological information, has excellent potential for additional growth. Future success of aquaculture depends on continued support of the programs described above. Scientists must continue to develop new techniques and provide additional information to help solve the ever-increasing problems that develop in aquaculture production, processing and marketing.

In summary, those of us representing the aquaculture industry continue to feel that significant benefits have already occurred from these Regional Center programs. We are also convinced that additional valuable information will be forthcoming from these programs if increased funding is made available. We commend your foresight in helping establish these Centers and genuinely appreciate this and other valuable support you have previously provided our industry.

The authorized level of funding for the five Regional Centers is $7.5 million. The total amount appropriated for the Centers for FY 90 was $3.75 million or $750,000 per Region. We strongly request your consideration of the 1991 FY budget to provide the $7.5 million full authorized level of funding for the five Regional Aquaculture Centers.

Again, we appreciate the opportunity to offer these comments of support.

Thank you.

MONDAY, MARCH 26, 1990.

AQUACULTURE PRODUCTION

WITNESS

RONALD ROGNESS, EXECUTIVE DIRECTOR, NATIONAL AQUACULTURE ASSOCIATION

Mr. WHITTEN. Mr. Ronald Rogness, National Aquaculture Association, is next.

Mr. ROGNESS. Good afternoon.

My name is Ronald Rogness, Executive Director of the National Aquaculture Council. We are involved in products all the way from the harvesting sector to the resale of aquaculture fish and shell fish.

I would like to thank you for the opportunity to testify.

For the record, I would like to note that the testimony is supported by Hugh Warren of the Catfish Farmers of America and Mr. Joe McCraren, Executive Director of the U.S. Trout Farmers Association and chairman of the board of the National Aquaculture Association.

Aquaculture production increased by 55 percent in 1986 through 1988. Despite its rapid growth and the fact that the final sales value in retail sales of aquaculture products reached $3.8 billion in 1988, the industry continues to be made up of mostly small-sized, single family-owned farms that are widely distributed throughout the United States.

The characteristics have hampered the structure and the organization of the industry. The industry finds itself in an unfortunate Catch-22 type situation.

The rapid growth problems with the confinement of fish that have been described earlier have dramatically increased the need for therapeutants.

In 1989, disease losses accounted for 70 percent of all catfish losses and 75 percent of all trout losses. Currently, the research for aquaculture is carried out in the interregional research program or project number 4 program.

While aquaculture's needs outpaced the IR-4 budget, w[illegible] are not large enough for the pharmaceutical companies to justi[illegible] expanding money for the approval of these drugs.

We are asking the subcommittee to annually appropriate the required $3 million for five years to implement the United States Government's task force on therapeutic compounds. This was put out by the Joint Subcommittee on Aquaculture in August of 1988.

The report prioritizes and provides costs for the needed therapeutants. We would further recommend that placing the money in the IR-4 program but suggest that an expert board be created. This board would review the task force report, two, make appropriate changes and, three, approve the research grants.

The board would consist of USDA, United States Fish and Wildlife Service and FDA and industry scientists. I would note that the USDA and the U.S. Fish and Wildlife Service both endorsed this board concept at a meeting earlier this year.

The second purpose for my testimony here is to endorse the testimony just given by Dr. Sheppard and the industry representatives that accompanied him. The close coordination between the centers and the industry have ensured that their monies have been spent for the maximum benefit of the industry.

In closing, we feel the monies appropriated for these two purposes would have the greatest impact over the greatest number of species in aquaculture.

I thank you again for the opportunity to appear here.

Mr. WHITTEN. Mr. Akaka, any questions?

Mr. AKAKA. No questions, Mr. Chairman.

Mr. WHITTEN. Thank you very much.

[Mr. Rogness' prepared statement follows:]

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STATEMENT OF

RONALD V. ROGNESS

EXECUTIVE DIRECTOR

NATIONAL AQUACULTURE COUNCIL

ON

FY 1991 USDA APPROPRIATIONS

TO

SUBCOMMITTEE ON RURAL DEVELOPMENT,

AGRICULTURE, AND RELATED AGENCIES

HOUSE APPROPRIATIONS COMMITTEE

ON

MARCH 26, 1990

Good afternoon, Mr. Chairman, I am Ronald V. Rogness, Executive Director of the National Aquaculture Council. The Council is an association representing many of the larger producers, processors, distributors and retailers of aquacultured fish and shellfish in the United States. My testimony has been endorsed by Mr. Joe McCraren, Executive Director of the United States Trout Farmers Association and Chairman of the Board of the National Aquaculture Association and Hugh Warren, Executive Vice President of the Catfish Farmers of America. The combined membership of these three organizations represent the vast majority of the U.S. aquaculture industry. I appreciate the opportunity to appear before this Committee and the support this Committee has given aquaculture in recent years.

According to the United States Department of Agriculture, aquaculture represents the fastest growing segment of the U.S. agriculture industry. In 1988, U.S. aquaculture production had a first sales value of $700 million dollars, a 55% increase in just two years. This production had a final sales value of $3.8 billion, a combined direct and indirect economic impact of $6.4 billion and accounted for almost 231 thousand full time jobs. What is perhaps most impressive, however, is that much of this economic activity occurs within rural areas where very few employment opportunities exist.

While the overall impacts of the industry are impressive, individual aquaculture operations remain small. For example, catfish farms of less than 80 acres of ponds are the rule. Most of these are owned and operated by families who have diversified

their production by growing fish. In addition to the small farm size, aquaculture operations are widely scattered throughout the United States. This geographic isolation and small average farm size has inhibited the industry's ability to organize.

I am here today to stress two areas where investments by the government would have the greatest overall benefit to the industry and surrounding rural economies.

First, we urge the Committee to appropriate funds necessary to implement the 1988 Report of the Joint Committee on Aquaculture Task Force on Therapeutic Compounds. This report prioritized the compounds needed in aquaculture and assigned an estimated cost to their approval by FDA and EPA. The Task Force recommended that the U.S. Congress provide $3 million annually for five years to fund studies on drugs urgently needed for aquaculture. Without this funding, it is doubtful the compounds will be registered because the industry does not have the capability to register the compounds and the animal health companies cannot justify the registration expenditures.

The loss of production to diseases is perhaps the most serious obstacle to future growth in our industry. According to official estimates from the USDA, disease accounted for 39% of total catfish losses in 1988, more than twice the next highest cause. In the second half of 1989, that figure had jumped to 70%. As for trout, disease losses accounted for 75% of all

losses. Money spent on therapeutant registration will have the greatest impact per dollar across the greatest possible number of species and regions.

We support the placement of this funding within the Interregional Research Project Number 4 (IR-4) Special Grants Program. To ensure the money is spent on the needs of the aquaculture industry, we strongly urge that an expert board be formed that would be responsible for: 1) reviewing the task force report, 2) making appropriate changes to the priority list, and 3) approving research grants. The Board would consist of representatives from USDA, USFWS, FDA and industry scientists. The Board would meet at regular intervals to review research progress and receive input from interested parties. The USFWS and USDA approved this Board concept at a meeting of agency representatives in January of this year.

The second reason for our presence here today is to support the testimony of Dr. C.G. Shepherd and the other Regional Aquaculture Center Directors. The Centers' close coordination with the industry in determining their annual priorities has ensured that the research performed is of maximum benefit to the industry. We strongly support the full funding of these Centers.

Mr. Chairman, this concludes my prepared remarks. Thank you again for this opportunity to testify.

MONDAY, MARCH 26, 1990.

AQUACULTURE—U.S. AND HAWAII

WITNESS

BILL HOUGART, THE OCEANIC INSTITUTE

Mr. WHITTEN. Dr. William C. Rowland?

Mr. AKAKA. Dr. Rowland is not able to be here, but we will have Bill Hougart, who will be testifying.

Mr. HOUGART. Thank you.

It is a privilege to be here and to thank you for your continuing support for aquaculture development in the United States and, in particular, for your support of our efforts in Hawaii.

We are very proud that the Congress and that the United States Department of Agriculture have designated the State of Hawaii as a host state for one of the five regional aquaculture centers, which you heard about earlier.

The University of Hawaii and the Oceanic Institute comanage the Center for Tropical and Subtropical Aquaculture on behalf of, and with the participation of, all interested research and extension institutions and the private sector in the Pacific region.

These public institution partners include the sea grant college program, the Hawaiian Institute of Marine Biology, the Agricultural Experiment Station and the cooperative extension service of the University of Hawaii, and the State of Hawaii's aquaculture development program.

Additionally, Mr. Chairman, the Agriculture Research Service (ARS) operates a research unit on aquacultural feeds at the Oceanic Institute. The Oceanic Institute also serves as coordinator of, as well as a participant in, the USDA-funded United States Shrimp Farming Consortium.

We are also developing a much needed aquatic feeds processing laboratory to help the United States compete successfully in this growing market, and to increase the usage of United States grains in aquatic feeds.

In recognition of these efforts and the critical need for improved research and development facilities in tropical aquaculture, this committee and the Congress supported the expanded efforts of these partner institutions by appropriating $6.375 million to construct a world-class aquaculture research and development facility at the Oceanic Institute.

We are pleased to report that state matching funds are now in place and we anticipate that building will reach completion within the coming year.

Mr. Chairman, we respectfully request an appropriation of $925,000 in fiscal year 1991. These funds would be used for equipment and operations at the new facility. The funds requested would allow the facility to develop and equip its programs in applied aquaculture.

Once completed and operational, the facility will be available to support the joint and individual aquaculture research and development activities of all partners of the Regional Tropical and Sub-

tropical Aquaculture Center, as well as the Agricultural Research Service and other participating public agencies.

All planning efforts relating to the design and functions of the facility to date have been conducted in close cooperation with these partners and with USDA. The over-riding focus will be to service the needs of the private aquaculture industry.

We thank you for the opportunity to bring this committee a brief update on our current aquaculture efforts and respectfully ask for consideration of our request.

Mr. WHITTEN. Any questions?

Mr. AKAKA. Thank you, Mr. Chairman.

Mr. Chairman, I would like to compliment Bill Hougart and Oceanic Institute for the work they are doing in Hawaii, and not only for Hawaii, but for the Nation. I know he is standing ready to help other nations who need assistance in aquaculture.

I just want to commend you for your work and to ask you to pass my regards to Dr. Rowland, the folks at Oceanic Institute.

Mr. HOUGART. I certainly will.

Thank you very much.

Mr. WHITTEN. A month ago we were in Norway. The supply of fish in the North Sea was becoming very, very low. We hear of over-fishing areas that are being depleted.

I realize this is not your particular area. Do you have knowledge of the world supply? Apparently there is a real danger in over-catching fish in some parts of the world.

Mr. HOUGART. My reading of the historical records on fish landings indicate that while there is an annual increase, if you combine all species worldwide every year, it is a decreasing rate. So we are leveling off. That is certainly the case for certain species.

Mr. WHITTEN. There is no question, with more and more people, more and more problems are being created in the world.

In Norway, it seems to be that a big part of the economy is wrapped around fishing in the North Sea.

Mr. HOUGART. That is the case, Mr. Chairman. Especially in Norway because of that, the Atlantic salmon industry has skyrocketed into a world-class industry from the last couple of years.

Mr. WHITTEN. Thank you very much for your appearance.

MONDAY, MARCH 26, 1990.

FISHPOND REVITALIZATION

WITNESS

WILLIAM W. MONAHAN, MAUI ECONOMIC DEVELOPMENT BOARD, INC.

Mr. WHITTEN. Dr. Monahan?

Mr. MONAHAN. I am Dr. William W. Monahan. I came here to be with you today from a small town on the island of Maui. It is a thrill for me to be here. I haven't been here since 1951, when I was a Second Lieutenant in the Marine Corps. That is the lowest rank in the Marine Corps, you understand that.

Mr. WHITTEN. Glad to have you.

Mr. MONAHAN. So it is exciting for me to be here. I gratefully appreciate the opportunity to speak before you.

You have my testimony, so I will try not to be redundant.

Mr. WHITTEN. We will have it included in the record. Be glad to have you proceed as you like.

Mr. MONAHAN. I would like to have it included in the record and maybe add a few other remarks, if I may, Mr. Chairman.

Mr. WHITTEN. Do you have any questions, Mr. Akaka?

Mr. AKAKA. Thank you very much, Mr. Chairman.

I want to commend Mr. Monahan for this revitalization, as you point out in your testimony.

Mr. Chairman, Hawaii and the ancient Hawaiians for many centuries had fish ponds. This was one way they got protein. It is strange in this day and age we are trying to return back to that period when we can grow our own protein from the fish.

Bill has received a grant already. They are making progress in trying to bring about what we call, generally call small family farms. He is doing this with small family fishing farms.

This will begin on the island of Maui in the area called Hana. I am very, very interested in seeing this progress and to hopefully get other families in that Hana area to take an interest in this fish pond idea and to begin to grow their own fish. It happens to be a part of Hawaii that is quite rural, and it is very well suited to what Mr. Monahan is doing.

I, too, want to commend you, Bill, for what you are doing and would certainly like to see it develop well in Hana first and, hopefully, in other places in Hawaii.

Thank you very much.

Mr. MONAHAN. Thank you.

Mr. WHITTEN. Any further comments?

Mr. MONAHAN. I think Hawaii is famous for our visitors industry. In the great success of the visitor industry, there is a segment of our population, particularly in the rural areas, that have been left behind. This is a group of people much like you would find in other rural areas, that want to preserve the Hawaiian culture with dignity. They want to do things that are economically viable but are still in the culture.

We now have a great opportunity here to combine modern aquacultural technology, that is, the stocking and the breeding of the

fish with the traditional practice in order to come out with what we think can be a real winner for our people.

So with your permission, sir, we would like to extend the work that we are doing here, and we are asking you for funds to carry this through probably for another two years, at which time I don't believe we will be in for continuing research.

This may be one program we will close down. We think in two or three years we can find the answers to this, revitalize the ponds and have a turn-key operation that will make real money for our rural people.

Thank you, sir.

Mr. AKAKA. Mr. Chairman, I hope that some day you or members of the committee can come out to Hawaii and count the number of fish ponds that the Hawaiians built in the ancient days that are still around but are not being used. I think your idea is to revitalize these ponds and some others and to bring back to the families the idea of raising fish in ponds in their back yards?

Mr. MONAHAN. That is correct.

Mr. AKAKA. Thank you very much.

Mr. WHITTEN. This committee has a background on that in connection with the soil conservation surveys.

In Texas, they call it a tank. But this effort of holding back water in hill areas has developed a lot of pools or ponds or whatever you call them, where fishing would be limited. Some of them are not large enough. According to the testimony, it has contributed greatly to the cattle industry.

At any rate, we have a long background in that area. I am proud of the progress we are making in that connection.

Mr. MONAHAN. Thank you.

Mr. WHITTEN. Thank you, sir.

[Dr. Monahan's prepared statement follows:]

TESTIMONY BEFORE THE UNITED STATES HOUSE OF REPRESENTATIVES
RURAL DEVELOPMENT AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS

March 26, 1990

HAWAIIAN FISHPOND REVITALIZATION (HFR)

Good afternoon. Thank you for permitting me to testify before your subcommittee. I am William W. Monahan representing the Maui Economic Development Board in the Hawaiian Islands.

The purpose of the Hawaiian Fishpond Revitalization (HFR) is to test the economic feasibility and applicability of revitalizing fishponds to stimulate economic development in rural Hawaiian settings. Consistent with Maui Economic Development Board's mission, the goals of HFR are to enhance economic growth that is consistent with Hawaiian social and cultural values and to diversify and broaden the island economy.

Aquaculture, the controlled production of aquatic plants and animals, has immense potential for a cottage industry in rural areas. This is especially true in Hawaii where year-round production is possible and aquaculture, via fishponds, is already part of the islands' cultural and social heritage.

For many centuries, fishponds were an important part of the Hawaiian economy and culture. Their operation represented a viable technology which, coupled with today's modern technology, has the potential to stimulate the rural economy. As late as 1900, fishponds were capable of producing up to 500,000 pounds of mullet. Unfortunately, many of these fishponds have fallen into disrepair or disuse. Various Hawaiian communities have demonstrated considerable interest in revitalizing these ponds, both to boost their economic welfare and to restore a part of their heritage.

Hawaiian Fishpond Revitalization is designed to integrate contemporary and traditional technology to revitalize Hawaii's remaining fishponds. Because many of the remaining fishponds are located in remote locales in Maui County, this concept will enhance economic development in rural Hawaiian communities. The objectives here are: 1) demonstration of an economically successful practice and 2) development of a process that fuses the best of traditional and modern technology with existing social values to produce an economic success. These objectives will integrate the efforts of state, county and federal government with the private, non-profit sector to achieve HFR objectives.

Work is beginning in 1990 to develop the economic and technical protocols for Hawaiian Fishpond Revitalization. This has been made possible through a Rural Economic Development Project entitled Opportunities through Hawaiian Fishpond Revitalization (HFR). This project is administered through FmHA. This work also initiates rehabilitation and stocking of selected small-scale fishponds with juvenile fish in a manner which incorporates, and is sensitive to, community cultural values. To complete this initial phase in small-scale ponds, and to start the transfer of this technology to full-scale fishponds for evaluation, we are requesting $500,000 for FY91. These funds will be used 1) to perform a pilot evaluation in small-scale fishponds of the economic and technical protocols developed with FY90 funds, 2) to identify two to three candidate full-scale Hawaiian fishponds for prototype evaluation of HFR technology, and 3) to initiate the preliminary permits and planning needed for a site-specific prototype evaluation of Hawaiian Fishpond Revitalization. The project's ultimate goal is successful technology transfer to the private sector.

MONDAY, MARCH 26, 1990.

MICROBIOLOGY RESEARCH

WITNESS

RUDY WODZINSKI, PROFESSOR, UNIVERSITY OF FLORIDA, CHAIRMAN, COMMITTEE ON AGRICULTURAL, AMERICAN SOCIETY FOR MICROBIOLOGY

Mr. WHITTEN. We will now hear from Dr. Wodzinski, American Society for Microbiology.

Dr. WODZINSKI. Mr. Chairman, my name is Rudy Wodzinski. I am a professor at the University of Florida and Chairman of the Committee on Agricultural for the American Society for Microbiology.

Microbiology just get their finger in every pie. We heard testimony earlier today about our disease problems. These have to be solidified.

Of our 37,000 members, many of our members are involved with agriculture. They are involved from one into the other, from the field to the disease problems to try to prevent food spoilage to where materials are in the stores.

We feel strongly about things having to do with the budget this year. We especially support the National Initiative of the Board of Agriculture. We recommended strongly that it be funded at $500 million per year.

The reason that we feel that this is a necessity is it is almost like a road where we have a number of potholes and each year we fill the potholes. It might be cyst nematode, diseases of pickerels, diseases of fish.

Those potholes keep opening up if we don't have a good base underneath it. We need this good base. We are short on some of the fundamental knowledge that is absolutely required to solve some of the major problems in agriculture.

We are really concerned, to, if I use my analogy further, that we had another road being built by a foreign competitor. Sure, we can take this road filled with potholes, but it is going to be bumpy. Pretty soon we will find out it is cheaper to go down that other road.

Some of us are concerned that if we don't get some of the fundamental answers necessary for plants and animals that the competition is going to outstrip us.

This last weekend my VCR broke down. I went to buy one. There weren't any American-made ones. There were some with American names on them, but no American-made ones.

Some of us are concerned the same thing will happen with agriculture in the future the way things are changing so rapidly. So we feel strongly that this initiative should be funded and it should be funded at the $500 million a year level.

If we look at the history of competitive grants, it was originally to be supported at $40 million. If we go back to those 1978 dollars, it has never quite made that, never got up to that level. Now we

don't have some of the knowledge because it wasn't funded at the highest level that it perhaps should have been.

We have evaluated this NRC proposal. We find these technical areas are areas that need research and should be funded.

We note also a recent publication by the National Science Foundation on profiles and agricultural sciences and human resources and funding. We find the average age of the scientist in agriculture is higher than it is in the other sciences.

Funding of the initiative helps to train scientists to replace our scientists that will be retiring in agriculture. We also would like to make some comments about the ARS budget and especially to voice our support on the need for a $10.8 million increase in food safety within ARS for research on some very important problems.

Just this last year there was a workshop held by the Institute of Food Technologists. They came out and found at this workshop that the number one problems in food are microbial problems, microbial spoilage. It is not pesticides, it is not the magnitude of the number one problem. It turns out to be microbial spoilage.

We feel strongly that ARS increase of $10.8 million for research in food safety should be funded.

We would also like to call attention to the salary levels within ARS. It is our understanding that the, they are having real problems recruiting individuals within ARS and that the level is low and they are losing some important people.

My last comment has to do with APHIS and has to do with the inspection necessary for them to meet their congressional mandate.

I believe the Administration has requested $8.7 million as budgeted. We support that $12 million be budgeted so more inspections could be made of the animal facilities.

Thank you, Mr. Chairman.

Mr. WHITTEN. We appreciate your statement.

I have pointed out several times that we face inflation. Under the system where we are spending and spending and not raising additional funds, it leaves us in a bad way.

Today's paper talks about money as though it were wealth. What we have been doing for a number of years is that the Federal Reserve has been printing money. The more they print, it means everything is going up in cost.

You are right about the salary situation. As I say, nobody wants to use the word "taxes," but everybody knows you can't keep spending and not paying. I don't know what we can do. It takes more and more money to buy the same thing. We have to do the best we can.

Dr. WODZINSKI. I understand, Mr. Whitten.

Mr. WHITTEN. Everybody on your side of the table has said, "But this is mine."

Dr. WODZINSKI. I don't mean it quite in that way. This particular one is an investment.

Mr. WHITTEN. We tried to show you what we are up against.

Dr. WODZINSKI. I know you have a tough job, and I wish you well. But we wish you would strongly consider our comments.

Mr. WHITTEN. We will. We will do the best we can.

Dr. WODZINSKI. Thank you, Mr. Whitten.

[Dr. Wodzinski's prepared statement follows:]

STATEMENT

OF THE

AMERICAN SOCIETY FOR MICROBIOLOGY

Presented by

Rudy J. Wodzinski, Ph.D., Chairman, Committee on
Agricultural, Food and Industrial Microbiology, of
the Public and Scientific Affairs Board of the
American Society for Microbiology
and Professor of Biological Sciences,
University of Central Florida, Orlando, Florida

before the

House Subcommittee on Rural Development, Agriculture,
and Related Agencies
of the
House Committee on Appropriations

Public Witness Hearing on the
FY 1991 U.S. Department of Agriculture
Research and Education Appropriation
March 26, 1990

AMERICAN SOCIETY FOR MICROBIOLOGY • 1325 Massachusetts Avenue, N.W. • Washington, D.C. 20005 • (202) 737-3600

Mr. Chairman and Members of the Subcommittee:

My name is Rudy Wodzinski and I am a Professor at the University of Central Florida and Chairman of the Committee on Agriculture, Food and Industrial Microbiology of the American Society for Microbiology (ASM). On behalf of the ASM, I wish to submit for your consideration the following comments on the Fiscal Year (FY) 1991 research budget for the U. S. Department of Agriculture (USDA).

The ASM is the largest single biological life science organization in the world with an active membership of over 37,000. Many of these individuals are engaged in agriculture research and are recipients of awards administered by the USDA. Our comments are directed primarily to the Competitive Research Grants Program and the initiative by the Board of Agriculture (BOA) of the National Research Council (NRC). We also must direct comments to certain areas with the Agricultural Research Service (ARS), and for increased support for the animal welfare inspection program in the Animal and Plant Health Inspection Service (APHIS) of the USDA.

The ASM strongly supports the BOA/NRC proposal, "Investing In Research: A Proposal to Strengthen the Agricultural, Food and Environmental System." The ASM recommends that the full $500 million recommended by the BOA/NRC be appropriated for FY 1991. We do not believe that the $100 million suggested by the Administration is adequate. The Administration's request assumes the burden in all the six research areas that the Board of Agriculture recommended without any real increase in budget. We have calculated that if the current Competitive Grants Research Program were funded at the same level as the National Science Foundation (NSF), it would require approximately $90 million. Additionally, the Administration has earmarked $15 million of the $100 million proposed for FY 1991 for research on a plant genome program. This is a new program suggested in the Administration's budget which is not included in the BOA/NRC initiative. If this endeavor of plant genome is necessary, then an additional $15 million should be appropriated to fund that research area.

We have evaluated the BOA/NRC Program areas from a technical standpoint. We are in complete agreement that all six areas that they suggest, namely: Natural Resources and Environment; Nutrition, Food Quality and Health; New Products, Processes and Value Added; Markets, Trade and Policy; and Animal Systems and Plant Systems, are all necessary if U.S. Agriculture is to maintain its competitive basis in a free market system.

It is important that we continue to invest in agriculture. In the past, the nation's investment in agriculture has produced a system of agriculture that provides cheap, wholesome food and fiber for its citizens. The number of hours that an individual must

work to pay for food is the lowest in the world. There are no lines in the U.S. for agricultural commodities. The return on prior investments in research on agriculture continues every hour of every day. It has produced the Green Revolution.

New technological development in the Basic Biological Sciences hold the promise for advances in agriculture that will equal or may well surpass those generated by the Green Revolution.

However, despite these significant achievements in our fundamental and practical knowledge of plant and animal systems, there are many technical barriers that must be overcome to achieve and speed up the momentum for using these latest advances in science.

Additionally, the lead that the U.S. has in agriculture is eroding. Many countries have implemented the agricultural practices developed in the U.S. and have become self-sustaining in their food production. Exports are declining. New discoveries in the biological sciences promise significant improvements in the production, quality and safety of food products. Many countries, including some developed and most developing nations, have recognized and invested in that potential. They are gaining the capacity for expanded production and lower per unit cost for agricultural products.

The consumer in the U.S. is seriously questioning current agricultural practices such as the use of pesticides and the effect of agriculture on water quality. New regulations in these areas may negatively influence yield and unit cost of food and fiber production.

The international and national signals must not be ignored. New technology must be developed if the U.S. is to remain as the leader in agriculture. This can only be ensured by an investment in fundamental agricultural research.

A recent publication by NSF, "Profiles-Agricultural Sciences: Human Resources in Funding" (NSF89-319), summarizes the current status of trained agriculture scientists. Twenty-five percent (25%) of the agricultural scientists in this country are over 50 years of age as compared to twenty (20%) for all other sciences. Twelve percent (12%) of the agricultural scientists are between the ages of 40-49 compared to twenty-four (24%) of all other sciences. Agricultural sciences has a higher age population and many will retire soon. These figures indicate that there will be a shortage of agricultural scientists for the available jobs in federal, academic and private research laboratories. They also indicate that a high proportion of present day agricultural scientists are probably not trained in modern technologies. This situation must be rectified. The same situation exists for the scientific equipment and infrastructure necessary for performing research in agricultural sciences.

Since 1978, the Competitive Research Grant Office (CRGO) has performed in exemplary fashion. It has proven that it manages the competitive grants for agriculture in a fair and unbiased manner. It has also been shown in all facets of federally funded fundamental research, that competitive grants is the vehicle that provides research ideas and the mechanism to produce highest return for money expended. The ASM is in agreement with the National Academy of Sciences recommendation that an

INITIATIVE in fundamental research in agriculture should reside in CRGO and that CRGO should be elevated as the fourth major Science and Education Agency within the USDA. Administration should be on an equal footing with the administration of the Agriculture Research Service (ARS), the Cooperative State Research Office (CSRS) and the Extension Service (ES). We believe that a fourth agency is an absolute requirement if the integrity of the Initiative proposed by BOA/NRC is to be maintained. The administrators of CRGO must have the freedom to administer the content of the program. The priorities must be made by utilizing the input from the entire scientific community if the opportunities, needs and challenges of agriculture are to be met. This can only be accomplished if the content is to be reflective of national priorities but not subjugated to the missions of other agencies within USDA's Office of Science and Education.

However, it is absolutely necessary that the Initiative within CRGO be coordinated with the needs of other agencies within USDA. It should be possible to accomplish these ends since CRGO has the prime (but not the sole) responsibility for fundamental agricultural research; CSRS would be responsible for satisfying local and state needs; ARS for development of agricultural needs and specific target missions and ES and CSRS for technology transfer. It should also be possible to coordinate the programs by making certain that ARS and ES bench scientists serve on appropriate program panels as is currently practiced. Additionally, ARS and ES scientists should be permitted to compete for CRGO research grants as is currently practiced.

We believe that if the BOA/NRC Initiative is fully funded, that it will provide the fundamental knowledge and training that will increase the Nation's capacity to produce quality food and fiber in an economically competitive manner which conserves resources and preserves the environment. Funding of the BOA/NRC Initiative will strengthen the agricultural, food and environmental system to meet the challenges that confront U.S. agriculture on a global basis. More importantly, it will provide the fundamental research needed to overcome technical barriers to achieve and speed up the momentum for using the latest advances in science to benefit the U.S. agricultural system.

The American Society for Microbiology also strongly supports and recognizes the need for expanded research by the ARS on food safety. In May 1989 the Institute of Food Technology published the results of a workshop with a consensus agreement by a number of professional societies that the number one problem in food safety was with the microbiological aspects of food. They stated that this problem was greater than any pesticide threat. The issues that have raised because of contamination and various processes with salmonella and other microbiological contaminants and especially with mycotoxins in food grains and feed grains emphasize the need for an expanded research role in food safety by the ARS. The American Society for Microbiology supports the need for a $10.8 million increase in food safety within ARS for research on these important problems.

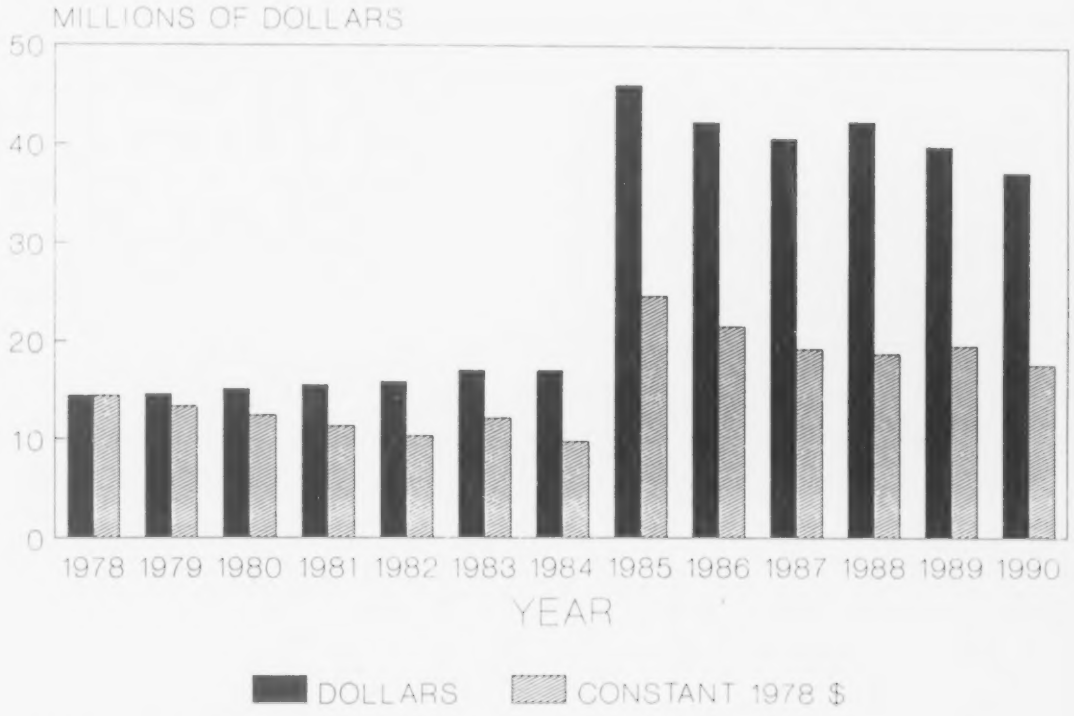
The ASM wishes to call attention to the special report by the NSF (NSF89-319) which documents that agricultural scientists have a significantly lower salary than other life scientists and a significantly lower salary than all scientists. It is our understanding that ARS has a real problem keeping top notch scientists and a very severe problem

when recruiting new scientific personnel. The high level of research and the training that is required to perform research in agriculture in the 1990's does not differ from that required for other life sciences. The low salary scale within ARS as compared to private industries and universities should be rectified. We suggest that the Congress implement a program to assure that the ARS is competitive in scientists salaries with private industry and the universities.

The ASM does not believe that the $8.7 million budgeted for Animal Welfare by APHIS is adequate. It recommends that Congress Appropriate $12 million to USDA's Animal Plant Health and Inspection Service for enforcement of the Animal Welfare Act. This modest increase in funding is urgently needed to carry out the Animal Welfare Program responsibilities which Congress assigned to the USDA.

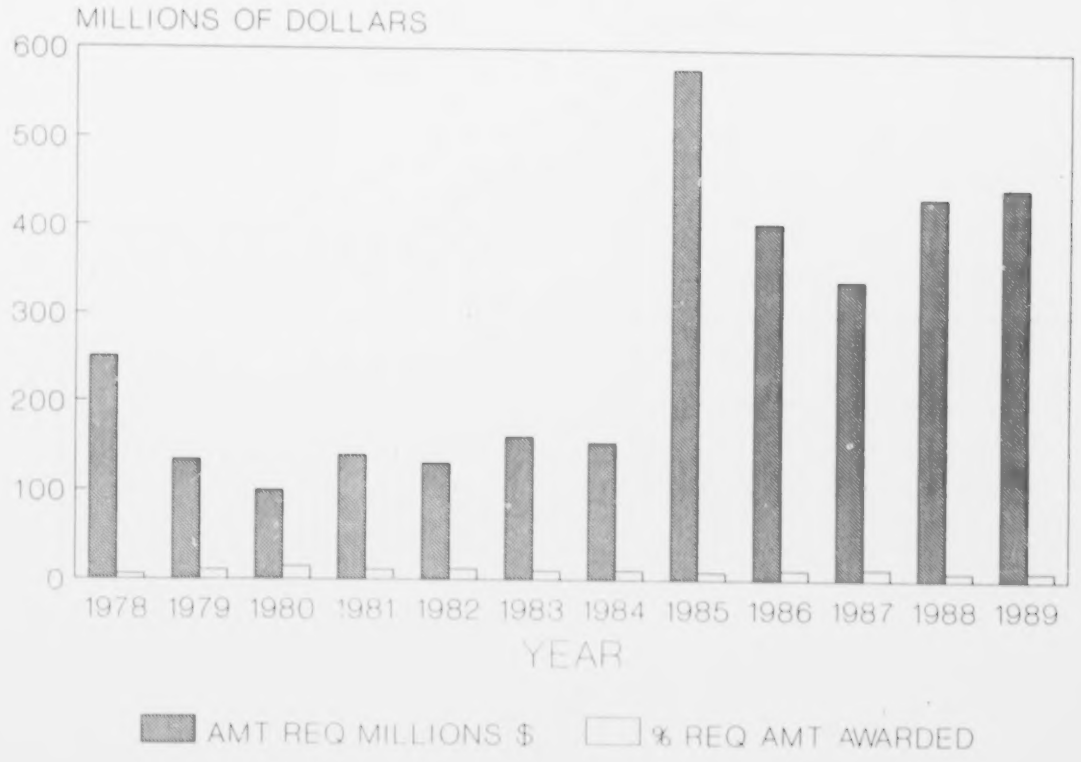
In summary, we strongly recommend that the $500 million proposed by the BOA/NRC be implemented and funded. We also recommend that the initiative in ARS on Food Safety be funded and that the ARS be made competitive in salaries. Finally we recommend that the APHIS Animal Welfare Program be funded at a level that permits them to carry out their Congressional mandate.

CRGO FUNDING HISTORY



ADJUSTED WITH OMB GNP DEFLATORS

FUNDING PRACTICES IN CRGO (FY 1978-1989)



SOURCE USDA

MONDAY, MARCH 26, 1990.

PLANT SCIENCE RESEARCH

WITNESS

TIMOTHY J. NG, AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE

Mr. WHITTEN. Mr. George C. Martin from Horticultural Science is next.

Mr. NG. My name is Timothy Ng. I am currently Vice President-elect for the American Society for Horticultural Science.

Dr. Martin cannot be here today so I am providing testimony for him.

What we would like to do is also provide endorsement for the National Research Council's $500 million per annum national funding initiative entitled "Investing in Research."

The President's budget has specific shortcomings in terms of plant science research. If you are not familiar with horticulture and if you look at our food crops in particular, they comprise one-third of the American diet, the fruits, vegetables and nuts.

We foresee as we enter the 1990s and approach the 21st Century real needs for plant research to handle some of the concerns we have nowadays, particularly those dealing with food safety, quality and also in terms of the environment.

The testimony outlines five areas we have identified as priority areas in horticulture research that we feel should get funding and require funding to solve some of our problems.

One would be for the standards for food safety. This includes food quality, increasing nutritional quality and trying to eliminate pesticide usage for crops.

A second area is sustainable horticultural systems where we deal with foreign competitions. We need a systems approach to make us more competitive.

The third issue is production of horticultural in the environment. Some of the problems are soil erosion and industrial pollution. We hope through developing systems approaches, we can address some of these concerns.

A fourth issue which is of concern to everybody is water quality, trying to minimize inputs, trying to look at uses in terms of recycling water and also possibly using saline water for growing some of our crops for food production.

The fifth area deals with breeding new varieties to deal with some of our marginal environments and also to solve some problems dealing with safety and environmental concerns.

We think with the genetic resources available and in terms of the new molecular biological techniques, we should make great progress.

We feel all five areas are strong areas we need support in and hope the National Research Council's initiative will be given serious consideration.

Mr. WHITTEN. Thank you very much. We appreciate your statement.

[The prepared statement follows:]

Priority Issues in Horticulture
for
Senate and House Public Hearings on Agricultural Issues

Summary

Five areas of research are described pertaining to the growth environment and the nutritional value and safety of horticultural food crops. Given sustained research support, horticulture has excellent potential to solve all five problems and to supply American with highly nutritious, safe food that is economically competitive with foreign produce in the world marketplace.

Our purpose here is to point out a specific short-coming in the President's budget with respect to support for plant science research. We endorse the National Research Council's $500 million per annum national funding initiative entitled: Investing in Research. The neglected areas of research for which support is badly needed are broadly categorized as plant environment, nutrient value, and safety of horticultural products. Strategies developed for production, handling and marketing of horticultural products previously were dictated by opportunity and economic pressures. These strategies were the natural order of events as American society developed and resources were readily available at low prices. Our current situation has evolved as resources became more costly, as wastes accumulated to an intolerable level, and as our population increased to the point that these issues have become pre-eminent. However, if we begin now, we still have opportunities to ameliorate all the problems involved.

Our argument to increase the President's budget for research in the area of plant environment, nutritional value, and safety of horticultural products breaks down into five areas of research emphasis, including the following: 1) develop standards for food safety, 2) describe systems for sustainable horticulture, 3) determine approaches to ecologically balance plant agriculture

with the natural environment, 4) establish procedures and policies to maintain water quality and availability, and 5) establish breeding programs to develop stress-tolerant crop plants.

Developing standards for food safety

Concern about the safety and quality of horticultural food crops is a crucial issue on the minds of many people in this country. The public has received mixed signals from the media regarding danger from chemical residues in our food supply. In some cases, minor incidents have developed into major news stories causing the general public to fear all food of a particular type is tainted. While these concerns are emotional, it is true that we lack definitive data based on systematic testing to allow a valid determination of whether food is or is not safe in certain situations. Recent concerns over food safety have led to reduced use of agricultural chemicals in general and pesticides in particular. When such steps are taken without alternative pest-control methods being available, crop production subsides. What is needed is for non-chemical alternatives for pest control to be in place prior to elimination of chemical pesticides. Biological control is one answer to reduced pesticide use, but the sustained effort of supported research is required to develop such biological control procedures. This approach is time consuming but reliable, yet it requires a sustained research effort to keep abreast of mutating pests for which new control measures are required. An attendant approach is to use conventional plant breeding and molecular biology to develop cultivars resistant to specific pests. This alternative needs to be pursued to its utmost. It too, requires time and resources for alternatives to be developed. In both cases, we need to determine what risks and tradeoffs are associated withthe so-called natural pesticides and biological control approaches vs. synthetic pesticide treatments.

The final aspect of this category involves food quality and nutritional value. Currently, about one third of the American diet is made up of horticultural food products. We now have means now for improving the nutritional value of these products. There has been no incentive to do this in the past, as buying and marketing was based on appearance rather than true food value. With the combined tools of genetics, physiology, and molecular biology at hand, we can increase food value at relatively low costs and in a fairly short period of time, given adequate resources. Here, we also require a proactive advertising campaign by industry touting the value of high-fiber, low fat, horticultural products to human nutrition, health and well being. These critical areas of work must be integrated carefully into the next four issue categories.

Systems for sustainable horticulture

The driving force toward developing sustainable horticulture is to integrate the features mentioned above involving food safety and food value with our concern for the problem of diminishing resources and economic competition from other countries. For any production enterprise to remain viable a grower must consistently realize profitability. With high investments it is not possible to throttle such a system up and down based solely upon political whim and public demand. In the case of sustainable horticulture we are talking about a continuous balance between the system that would provide the best yield per unit input of raw materials and energy, and that the yield obtained would be economically acceptable on a yield per area basis without destroying the environment in the process. This approach of low or lowered input sustainable horticulture must be highly interdisciplinary to succeed and should not be confused with total organic farming. The approach for a true sustainable horticulture is extraordinarily sophisticated and the systems approach to field production of horticultural crops will have to be developed. This system

approach must include both integrated pest management and integrated crop management procedures. Production inputs will include new cultivars, biological pest control, low or no-till soil management, nitrogen fixation, mixed or intercropping, effective crop rotation, and more efficient use of chemicals and water. Utilization of recycled wastes also would be highly desirable. Yield outputs may be have to be reduced slightly on an area basis to achieve a sustainable, profitable, absolute yield of pesticide residue-free product having acceptable quality and high food value. Education of growers, consumers and even researchers of the long-term, exciting prospects of this approach will be a major challenge.

Approaches for balancing production horticulture with the environment

The third category of concern is to integrate production horticulture into the global aspects of our environment. One simply cannot be concerned about the microclimate of any given field, as the ramifications are global and vast in scope. The salient issues include the fate of agricultural chemicals in the food chain, ground water contamination with nitrates and pesticides, soil erosion, effects of urban sprawl, destruction of the rainforests, industrial poisoning of air and water, and last but not least a raging argument over the greenhouse effect. We have the capability to offset or reverse further global change by human intervention. We can either cause erratic weather patterns and global warming trends that will overshadow all other issues of importance to agriculture, or place under control our actions in order to ameliorate these problems. It is our contention that development of sustainable horticultural systems would help to minimize the horticultural contribution to environmental instability. At the same time, we should prepare for the worst-case scenarios of global climate change and proceed to develop cultivars of horticultural crops resistant to environmental stresses. This includes the development of genotypes

that could provide physical benefits to their environment while providing nutritional and/or aesthetic benefits with safer, easier pest control. These are not pie-in-the-sky issues, but rather researchable questions in horticulture, provided that sufficient funding is made available. For horticulture and other fields of agricultural science to respond effectively to the global change threat we need a completely new policy from Washington, D.C.: A comprehensive energy policy, legislation to outlaw unchecked environmental pollution by a certain date and major increases in research funding for sustainable agriculture, environmental concerns and food safety as mentioned above. These problems are researchable through genetic improvement of horticultural crops for greater stress tolerance.

Procedures to maintain water quality

The fourth category, quality and availability of water for agricultural crop production, is emerging rapidly as an issue of major importance everywhere. This is an issue in which agriculture has been a major contributor to the problem and if we are to regain the public trust we must demonstrate that we are becoming better stewards of the environment. We must now become part of the solution for sustaining water quality. Historically, irrigated horticulture has used water inefficiently. The reasons are as mentioned in the summary to this piece, that is, the opportunity and economic pressures have forced certain kinds of waste water-use procedures. We know that agricultural runoff contributes to eutrophication of lakes and streams and that it can contaminate ground water that people use. If pesticide contamination of ground water is found to be wide spread, strict new federal use restrictions may have a controlling effect on grower use of water. All of this points to need for renewed efforts in research on water use. The installation of water-conserving and recycling devices will be required in greenhouses, nurseries, and field-irrigation systems. Runoff and

deep percolation from irrigation systems must be virtually eliminated, not only to protect ground water but also because water for agriculture is increasingly diverted for use in large metropolitan areas, especially in the arid regions. Specifically, we need research to prepare for the worst-case scenario of having to trickle or deep irrigate our horticultural crops with saline water. As well, drought and salt-resistant genotypes should be developed with increased crop value per unit of water use.

Breeding programs to develop stress tolerant plants

All four categories described are united under stress. The stresses referred to here include high and low temperature, high salt levels, the availability of quality water, and the presence of air pollutants, all of which bring about stress to horticultural crops when not provided in a timely manner or amount. In order to manage stress, cultivar improvement for adaptation of crops to specific stressful environments can be achieved through breeding and through molecular biological means.

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Executive Director

Priority Issues in Horticulture

Prepared by

George C. Martin, President
American Society for Horticultural Science

for

Senate and House Public Hearings on Agricultural Issues

March 1990

ESTABLISHED IN 1903 FOR THE PROMOTION OF THE SCIENCE OF HORTICULTURE

Priority Issues in Horticulture

The following statement was prepared by ASHS President George C. Martin to be given at the public hearings on agricultural issues. The statement was presented by Timothy J Ng (Univ. of Maryland), ASHS Education Division Vice President-elect, at the public hearing of the Subcommittee on Rural Development, Agriculture, and Related Agencies (chaired by Jamie L. Whitten) of the House Committee on Appropriations on 26 March 1990. Although the Senate Committee on Appropriations' Subcommittee on Agriculture, Rural Development, and Related Agencies did not plan to accept public testimony, copies of the written statement were accepted for the record by the subcommittee.

Summary

Five areas of research are described pertaining to the growth environment and the nutritional value and safety of horticultural food crops. Given sustained research support, horticulture has excellent potential to solve all five problems and to supply Americans with highly nutritious, safe food that is economically competitive with foreign produce in the world marketplace.

Our purpose here is to point out a specific shortcoming in the President's budget with respect to support for plant science research. We endorse the National Research Council's $500 million per annum national funding initiative, entitled *Investing in Research*. The neglected areas of research for which support is badly needed are broadly categorized as plant environment, nutrient value, and safety of horticultural products. Strategies developed for production, handling, and marketing of horticultural products previously were dictated by opportunity and economic pressures. These strategies were the natural order of events as American society developed and resources were readily available at low prices. Our current situation has evolved as resources became more costly, as wastes accumulated to an intolerable level, and as our population increased to the point that these issues have become preeminent. However, if we begin now, we still have opportunities to ameliorate all the problems involved.

Our argument to increase the President's budget for research in the area of plant environment, nutritional value, and safety of horticultural products breaks down into five areas of research emphasis, including the following: 1) develop standards for food safety; 2) describe systems for sustainable horticulture; 3) determine approaches to ecologically balance plant agriculture with the natural environment; 4) establish procedures and policies to maintain water quality and availability; and 5) establish breeding programs to develop stress-tolerant crop plants.

Developing standards for food safety

Concern about the safety and quality of horticultural food crops is a crucial issue on the minds of many people in this country. The public has received mixed signals from the media regarding danger from chemical residues in our food supply. In some cases, minor incidents have developed into major news stories, causing the general public to fear that all food of a particular type is tainted. While these concerns are emotional, it is true that we lack definitive data based on systematic testing to allow a valid determination of whether food is or is not safe in certain situations. Recent concerns over food safety have led to reduced use of agricultural chemicals in general and pesticides in particular. When such steps are taken without alternative pest-control methods being available, crop production subsides.

What is needed is for nonchemical alternatives for pest control to be in place prior to elimination of chemical pesticides.

Biological control is one answer to reduced pesticide use, but the sustained effort of supported research is required to develop such biological control procedures. This approach is time-consuming but reliable, yet it requires a sustained research effort to keep abreast of mutating pests for which new control measures are required. An attendant approach is to use conventional plant breeding and molecular biology to develop cultivars resistant to specific pests. This alternative needs to be pursued to its utmost. It, too, requires time and resources for alternatives to be developed. In both cases, we need to determine what risks and tradeoffs are associated with the so-called natural pesticides and biological control approaches vs. synthetic pesticide treatments.

The final aspect of this category involves food quality and nutritional value. Currently, about one-third of the American diet is made up of horticultural food products. We now have means for improving the nutritional value of these products. There has been no incentive to do this in the past, as buying and marketing were based on appearance rather than true food value. With the combined tools of genetics, physiology, and molecular biology at hand, we can increase food value at relatively low costs and in a fairly short period of time, given adequate resources. Here, we also require a proactive advertising campaign by industry touting the value of high-fiber, low-fat, horticultural products to human nutrition, health, and well-being. These critical areas of work must be integrated carefully into the next four issue categories.

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The driving force toward developing sustainable horticulture is to integrate the features mentioned above—involving food safety and food value—with our concern for the problem of diminishing resources and economic competition from other countries. For any production enterprise to remain viable, a grower must consistently realize profitability. With high investments it is not possible to throttle such a system up and down based solely on political whim and public demand. In the case of sustainable horticulture, we are talking about a continuous balance between the system that would provide the best yield per unit input of raw materials and energy, and that the yield obtained would be economically acceptable on a yield-per-area basis without destroying the environment in the process.

This approach of low- or lowered-input sustainable horticulture must be highly interdisciplinary to succeed and should not be confused with total organic farming. The approach for a true sustainable horticulture is extraordinarily sophisticated and the systems approach to field production of horticultural crops will have to be developed. This systems approach must include both integrated pest management and integrated crop management procedures. Production inputs will include new cultivars, biological pest control, low- or no-till soil management, nitrogen fixation, mixed or intercropping, effective crop rotation, and more efficient use of chemicals and water. Utilization of recycled wastes also would be highly desirable. Yield outputs may have to be reduced slightly on an area basis to achieve a sustainable, profitable, absolute yield of pesticide-residue-free product having acceptable quality and high food value. Education of growers, consumers, and even researchers of the long-term, exciting prospects of this approach will be a major challenge.

Approaches for balancing production horticulture with the environment

The third category of concern is to integrate production horticulture into the global aspects of our environment. One simply cannot be concerned about the microclimate of any given field, as the ramifications are global and vast in scope. The salient issues include the fate of agricultural chemicals in the food chain, groundwater contamination with nitrates and pesticides, soil erosion, effects of urban sprawl, destruction of the rain forests, industrial poisoning of air and water, and last, but not least, a raging argument over the greenhouse effect. We have the capability to offset or reverse further global change by human intervention. We can either cause erratic weather patterns and global warming trends that will overshadow all other issues of importance to agriculture, or place under control our actions to ameliorate these problems.

It is our contention that development of sustainable horticultural systems would help to minimize the horticultural contribution to environmental instability. At the same time, we should prepare for the worst-case scenario of global climate change and proceed to develop cultivars of horticultural crops resistant to environmental stresses. This includes the development of genotypes that could provide physical benefits to their environment while providing nutritional and/or aesthetic benefits with safer, easier pest control.

These are not pie-in-the-sky issues, but rather researchable questions in horticulture, provided that sufficient funding is made available. For horticulture and other fields of agricultural science to respond effectively to the global change threat, we need a completely new policy from Washington, D.C.: a comprehensive energy policy, legislation to outlaw unchecked environmental pollution by a certain date, and major increases in research funding for sustainable agriculture, environmental concerns, and food safety as mentioned above. These problems are researchable through genetic improvement of horticultural crops for greater stress tolerance.

Procedures to maintain water quality

The fourth category—quality and availability of water for agricultural crop production—is emerging rapidly as an issue of major importance everywhere. This is an issue in which agriculture has been a major contributor to the problem; if we are to regain the public trust, we must demonstrate that we are becoming better stewards of the environment. We must now become part of the solution for sustaining water quality.

Historically, irrigated horticulture has used water inefficiently. The reasons are as mentioned in the summary to this piece—that is, the oppoprtunity and economic pressures have forced certain kinds of waste water use procedures. We know that agricultural runoff contributes to eutrophication of lakes and streams and that it can contaminate groundwater that people use. If pesticide contamination of groundwater is found to be widespread, strict new federal use restrictions may have a controlling effect on use of water by growers.

All of this points to the need for renewed efforts in research on water use. The installation of water-conserving and recycling devices will be required in greenhouses, nurseries, and field-irrigation systems. Runoff and deep percolation from irrigation systems must be virtually eliminated, not only to protect groundwater but also because water for agriculture is increasingly diverted for use in large metropolitan areas, especially in the arid regions. Specifically, we need research to prepare for the worst-case scenario of having to trickle or deep irrigate our horticul-

tural crops with saline water. As well, drought and salt-resistant genotypes should be developed with increased crop value per unit of water use.

Breeding programs to develop stress-tolerant plants

All four categories described are united under stress. The stresses referred to here include high and low temperature, high salt levels, the availability of quality water, and the presence of air pollutants, all of which bring about stress to horticultural crops when not provided in a timely manner or amount. To manage stress, cultivar improvement for adaptation of crops to specific stressful environments can be achieved through breeding and through molecular biological means.

MONDAY, MARCH 26, 1990.

FORESTRY RESEARCH

WITNESS

JOHN HEISSENBUTTEL, MANAGER, FOREST POLICY AND RESEARCH, AMERICAN FOREST COUNCIL

Mr. WHITTEN. Mr. Heissenbuttel of the American Forest Council.

Mr. HEISSENBUTTEL. My name is John Heissenbuttel. I am Manager of Forest Policy and Research for the American Forest Council.

I would like to express our support for a fiscal year 1991 funding of $25 million for McIntire-Stennis Cooperative Forestry Research Act and $7.8 million for competitive forestry research grants to be contained in the National Initiative for Research.

The forest products industry is of critical importance to the economy of the Nation as a whole. In the South alone, past forest industry research has contributed to forest products generating an annual value of over $6 billion.

According to our recent forest service report, this amount was twice the value of soy beans or cotton crops harvested southwide and three times the value of tobacco, wheat or corn.

The forest products industry generates one out of every nine workers and paid one out of every 10 in wages and salaries.

Despite the success of the industry, funding for forest industry research has not kept pace with inflation over the past decade and will not sustain adequate levels of forest industry research to ensure necessary increases of forest productivity in the future.

These reductions in forest industry research will even actually result in America not being as competitive as we could be in a world market.

Now, McIntire-Stennis funds promote a broad range of critical forest industry research, including expanding foreign markets and increasing timber productivity while maintaining water quality, wildlife and recreation resources.

Moreover, the McIntire-Stennis funds leverage additional funding. For every dollar spent in McIntire-Stennis, four times those dollars are leveraged from other sources. It is a good investment. As far as research grants go, last year AFS joined others in the forest industry community in a consensus position supporting $8 million in competitive grants.

We appreciate the support this committee gave in finding us $4 million for the fund. This year, again, we are asking for $7.8 million.

AFC supports the overall goals of the National Initiative for Research on Agriculture, Food and the Environmemt. The initiative places many existing funding authorities under a single competitive program.

However, we are concerned with the Administration's proposal for only $100 million in this big program. Together with many other members of the agricultural community, we request support of $150 million for the initiative to ensure that we get, there is approximately $30 million in the program area of natural resources

and the environment. This would allow about $7.8 million for forest and wildlife competitive research.

AFC supports fiscal year 1991 funding of $25 million for the McIntire-Stennis Act. We also request support for the National Research Initiative at $150 million with $7.8 million for forest and wildlife competitive grants.

We believe this level of funding is necessary in order to maintain our competitive edge in the world market.

I thank you and I would be happy to answer any questions.

Mr. WHITTEN. Thank you very much.

This committee has a long background in trying to help with the forest industry.

[Mr. Heissenbuttel's prepared statement follows:]

TESTIMONY

OF

JOHN HEISSENBUTTEL

MANAGER

FOREST POLICY AND RESEARCH

AMERICAN FOREST COUNCIL

BEFORE THE

SUBCOMMITTEE ON RURAL DEVELOPMENT AGRICULTURE, AND RELATED AGENCIES

COMMITTEE ON APPROPRIATIONS

OF THE

UNITED STATES HOUSE OF REPRESENTATIVES

MARCH 26, 1990

Good Afternoon. My name is John Heissenbuttel. It is a pleasure to testify before the Rural Development, Agriculture, and Related Agencies Subcommittee on Appropriations. I am Manager of Forest Policy and Research for the American Forest Council.

The American Forest Council (AFC) is a national forest industry trade association affiliated with the American Paper Institute and the National Forest Products Association. Together, these associations represent more than 2,500 companies throughout the United States engaged in growing and harvesting timber and the manufacturing of timber products.

I would like to express our support for FY 1991 funding of $25 million for the McIntire-Stennis Cooperative Forestry Research Act and $7.8 million for Competitive Forestry Research Grants to be contained in the National Initiative for Research on Agriculture, Food, and the Environment.

I. AFC Supports $25 Million for the McIntire-Stennis Act.

While AFC strongly supports the reduction of the Federal budget deficit, we believe that the continued erosion of funding support for forestry research in the public and private sector has reached a critical stage and must be addressed. An increased public commitment to $25 million for forestry research through the McIntire-Stennis Act is needed.

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Mr Chairman and members of the Committee, the forest products industry is of critical importance to the economy of the South and the nation as a whole. Past forestry research has contributed to forest products generating an annual value of over $6 billion. According to a recent Forest Service report, "The South's Fourth Forest":

- This amount was twice the value of soybeans or cotton crops harvested southwide in 1984 and three times the value of the tobacco, wheat, or corn crops.

- Compared with all manufacturing in the South, forest industries employed one out of every nine workers and paid $1 out of every $10 in wages and salaries.

Despite this success, funding for forestry research has not kept pace with inflation and will not sustain adequate levels of forestry research, and thus forest productivity, in the future. We in the forest industry fear that these reductions in forestry research will eventually result in American forestry being less productive and competitive than other forested regions of the world.

McIntire-Stennis Act funds promote a broad range of critical forestry research in areas such as: (1) expanding domestic and foreign markets for forest products; and (2) increasing timber productivity while maintaining the associated water, wildlife,

recreation, and range resources. These funds are also used to help support graduate programs which produce future forestry researchers. Moreover, these McIntire-Stennis funds leverage additional funding at the rate of more than four-times the McIntire-Stennis investment.

II. AFC Supports $7.8 Million in Competitive Forestry and Wildlife Research Grants as Part of the National Initiative on Agriculture, Food, and the Environment.

Last year, AFC joined many others in the forestry community in a consensus position supporting a revitalized Forestry Competitive Research Grants Program at a level of $8 million. Our consensus position stated that investments in forest research in the South averaged only about $0.06 per acre per year. This low level of investment means that many important forestry research needs remain unfunded. We appreciated the Agriculture Committees partial support of the Competitive Forestry Research Grants program at $4 million in FY 1990.

This year AFC supports the overall goals of the National Initiative for Research on Agriculture, Food, and the Environment. The Initiative places many existing research funding authorities under a single competitive grant program. However, much of the funding for the Initiative is earmarked for designated high priority areas of research. We are concerned that the Administrations Budget request of $100 for the National Initiative eliminates the forestry competitive grants program.

AFC requests that the Agriculture Appropriations Subcommittee support a funding level of $150 million for the initiative to ensure that forestry competitive grants are retained. Specifically, we support a funding level of $30 million for the program area of Natural Resources and the Environment. Within this program area, we support $7.8 million for Forest and Wildlife competitive research.

III. Conclusions

The American Forest Council (AFC) supports FY 1991 funding of $25 million for the McIntire-Stennis Act. We also request your support for the National Research Initiative at $150 million with $7.8 million for forest and wildlife competitive grants. We believe that this level of funding is necessary in order for the U.S. to maintain its competitive edge in the future global economy of forest products.

Thank you. I would be happy to answer any questions.

MONDAY, MARCH 26, 1990.

RESEARCH, EXTENSION AND INSPECTION

WITNESS

ROBROY FISHER, CHAIRMAN, INDUSTRY/GOVERNMENT RESEARCH COMMITTEE, NATIONAL COTTON COUNCIL

Mr. WHITTEN. Mr. Fisher?

Mr. FISHER. Mr. Chairman, I am Rob Fisher, a cotton producer from Greenville, Mississippi, and Chairman of the National Cotton Council's Industry/Government Research Committee.

In their annual meeting last month, Council delegates strongly endorsed expanded programs to reduce costs and increase competitiveness of United States cotton.

We feel strongly that research, extension, and action program funding is a competitive necessity representing a sound national investment.

I will address a few specifics and since time doesn t permit an in-depth review, I refer you to our written statement for additional detail.

Agricultural research and extension programs are proposed to be reduced for 1991 while the total Federal R&D budget is slated for a seven percent increase, most of which is for defense and space research which consume 65 percent of the Federal R&D budget.

By comparison, agriculture's share is less than 1.5 percent. Since the Nation's ability to provide food and fiber is a basic necessity, we think the priority given agriculture is much too low.

Extension service. Extension service programs are proposed to be cut six percent, keeping formula funds at about the 1990 level. While programs suffer, we understand the department's priorities and reluctantly can adjust to the proposal.

Agricultural research service. The Agricultural Research Service (ARS) is proposed to receive a 6.4 percent increase. We appreciate this, even though it is below the needs for a growth program.

We support the emphasis in food safety research, envisioning that funds will be available to solve aflatoxin problems. We support a multicrop coalition request, including an ARS commitment for $1.5 million of their budget increase for aflatoxin research.

Another problem common to many commodities including cotton is the sweet potato whitefly. Uncontrollable by conventional methods, this pest is costing millions of dollars in yield and quality losses.

An intercommodity task force has developed a research plan requiring $1.5 million in new appropriations and we support the task force effort.

We also support the proposed increase for plant systems research, especially regarding a plant genome mapping program.

Cooperative states research service. The CSRS budget is slated for a decrease of 10 percent, mostly from special grants. Hatch funds were increased about two percent, a proposal far short of needs.

While considering the request for the National Research Initiative, we submit that pure competitive grants have rarely met needs

of traditional production research. We hope this committee will continue to consider all avenues of agriculture research funding, whether formula funds, special grants or direct appropriations.

Animal and plant health inspection service. Council delegates endorsed continuation of pest management, eradication, and containment programs administered by APHIS. These are exemplary of technology to reduce pesticide use while enhancing the environment.

The proposed budget cuts pink bollworm funds to $1.087 million. We are requesting $4.7 million to continue this program and to equip a new rearing facility located in Phoenix and paid for by California growers.

We are pleased that USDA requested $9.8 million for continuation of the boll weevil eradication programs in the southeast and southwest and Texas/Oklahoma containment programs. However, the request is short of needs and we are seeking appropriations of $13.8 million for APHIS's share.

The Georgia, Florida and Alabama program, while making significant progress toward the goal of eradication, experienced serious cash flow problems.

Recent aggressive steps have been taken by southeastern growers to provide additional program revenue. However, an increase in the Federal effort is needed to allow for a positive cash flow and to protect costly investments.

USDA export market development. On another front, Council delegates resolved to maximize the authorization of funds for foreign market development.

Cotton Council international participants in both the export market development and the targeted export assistance [TEA] programs. We support funding of at least $115 million as a minimum level for the foreign agriculture service.

We urge authorization of funding for the TEA program at $325 million for fiscal year 1991 and will request reauthorization in new farm legislation at the level authorized in the Food Security Act of 1985.

Cottonseed products are important income-producers for farmers, ginners and oil mills. We support funding for the sunflower and cottonseed oil assistant program [SCOAP].

U.S. Department of Commerce. While Department of Commerce funding may be beyond the scope of this subcommittee, we appreciate the continued support of NOAA's agricultural weather services (AWS). We request continued funding for agriculture weather service centers until alternatives to current systems can be developed.

In summary, recent progress in new technology for meeting production and environmental concerns is encouraging. Strong national research, extension, action, and international market development programs are vital instruments for survival and will go a long way toward meeting our global competition.

Thank you, Mr. Chairman.

Mr. WHITTEN. Thank you very much. We appreciate your statement.

I think we ought to start looking at American production. What we are doing is primarily teaching other folks to compete with us.

Mr. FISHER. I could not agree with you more, Mr. Chairman.

Mr. WHITTEN. We have opened our gates to everything that wants to come in here.

I today called on the Library of Congress to show us what we are doing to keep this other stuff out. We are the only country I know of that is following the policy of opening everything to everybody. In the process, we are hurting areas such as the Mississippi Delta. As you know, it was in my district for a long time, I represent the state.

Mr. FISHER. I think it still is.

Mr. WHITTEN. I am just back from there. They just dried up small towns throughout the Delta. I have tried to prove that we are destroying the farmer with the present government policies.

Now it is ruining the country. We owe $3 trillion, a big part of it is because we are letting all this stuff come in from abroad, which we buy on credit. I don't know.

We are going to do the best we can with your request here, but in the meantime we are trying our best to get people to realize that it is a competitive world in which we live.

It used to be, you know, if you were a wholesale grocer and your retail outlet burned up, you put them back in business. Now, we put them in the wholesale business.

I have tried to raise this point. I have raised it over and over. At the White House level, I never have anybody take issue with me. They just don't heed my warnings.

Thank you very much.

[Mr. Fisher's prepared statement follows:]

Statement of the National Cotton Council
before the House Rural Development,
Agriculture and Related Agencies Subcommittee on Appropriations
by Mr. Robroy Fisher, Chairman
Industry/Government Research Committee
National Cotton Council
March 26, 1990

The National Cotton Council is the central organization of the U.S. cotton industry, representing growers, ginners, warehousemen, cottonseed crushers, merchants, cooperatives, and textile manufacturers from California to the Carolinas. The organization provides an industry-wide forum whereby major problems and priorities are identified and consolidated in policies and action programs.

At the Council's annual meeting in February, the 305 delegates selected by 90 state, regional and national organizations strongly endorsed expanded agricultural research, education, market development and action programs to reduce costs and increase competitiveness of U.S. cotton. In a unanimous resolution, they expressed continuing support for appropriations for research and extension programs that provide for efficient program growth. They believe that such action is not inflationary and will produce public benefits far in excess of its cost.

Delegates also asked for accelerated research to solve environmental problems, calling for new technologies to control pests, manage crops, and conserve natural resources. The industry supports reductions in crop production inputs where they are consistent with good production practices, are practical, and are cost effective. We also support efforts to assure a wholesome and safe food and fiber supply. While acknowledging the importance of these critical concerns, our members also stress that productivity and profitability must be maintained and enhanced if U.S. agriculture is to survive and thrive.

Therefore, a pressing issue interrelated with these growing national concerns is public investment in programs to reduce costs and enhance productivity. Maintaining adequate research and extension budgets to help agriculture reduce costs and improve quality while meeting environmental and safety requirements is a competitive necessity and represents a sound national investment.

Budgetary restraint is also a reality and, understanding the need for all sectors of the nation to help hold the line on government spending, we have reluctantly accepted a no-growth budget for agricultural research and extension for several years. This was done with the expectation that funding for essential projects would be provided in the future. Such has not been the case, so we are compelled to recommend several adjustments in USDA's proposed FY 1991 budget.

Total research and extension programs for agriculture are proposed to be reduced slightly for 1991. These reductions are in sharp contrast with the total federal R&D budget which includes a proposed increase of 7%. Most of this increase is for defense and space research which consume 65% of the total federal R&D budget.

Agriculture's share is less than 1.5%. Since the nation's ability to provide food and fiber is basic to the health, welfare, and security of its people, we think the priority given agriculture is much too low.

Extension Service

Extension Service programs are proposed to be cut 6%, however, Smith-Lever formula programs are to be maintained at slightly more than the 1990 level. While programs suffer with level funding, we nevertheless understand the Department's priorities and reluctantly can adjust to the proposal. We support the proposed increase for pesticide impact assessment, water quality, food safety, and continuation of extension pest management programs.

Agricultural Research Service

The Agricultural Research Service (ARS) is proposed to receive a 6.4% increase over the 1990 appropriations. We appreciate the increase, even though it is considerably below the needs for a growth program.

This increase leaves little to maintain the base program for agricultural research, especially when considering the fact that we have entered the second decade of decline in the number of federal agricultural scientists. It is essential that the ARS maintain a well funded, balanced program of basic and applied research for meeting the critical near- and long-term needs of American agriculture and the consumer.

We commend additional emphasis in research to improve pesticide application technology and urge USDA to continue its efforts to strengthen the science of these programs. Such efforts are essential to maintaining environmental quality and improving profitability by more accurate placement of plant protection chemicals.

We support the agency's request for increase in food safety research with the expectation that funds will be available to solve aflatoxin problems. Aflatoxin contamination of food and feed is a concern for many crops and we appreciate the Congressional add-on last year. A multi-crop aflatoxin research group is working with the USDA to develop a program to eliminate aflatoxin as a food contaminant. The working group is requesting a commitment from the ARS to devote $1.5 million of their FY 91 budget increase for aflatoxin research.

There are other research problems common to many commodities. A growing pest for cotton and many vegetable, fruit, ornamental nursery, and floral crops is the sweet potato whitefly. The whitefly is a serious pest uncontrollable by conventional cultural and chemical methods. Through direct yield losses, plant diseases, and product quality losses, hundreds of millions of dollars of economic loss to U.S. agriculture can be attributed to the whitefly. An intercommodity task force has developed a research plan requiring $1.5 million in FY 91 appropriations. We support the efforts of the intercommodity task force.

We support the ARS proposed increase for plant systems research, especially as it regards implementing a plant genome mapping program. In a biotechnology research workshop sponsored by the Council last year, conferees reported that new knowledge of genetic structure of important economic crops is essential if new bioengineering techniques are to be used to alter plant characteristics.

Cooperative States Research Service

The CSRS budget is slated for a decrease of 10% from the FY 90 appropriations. Hatch Act formula funds, the mainstay of federal support for state land-grant research institutions, are proposed to receive less than 2%, an increase far short of needs. When inflation is considered, formula funds have consistently received a net annual reduction of from 2 to 8%, further eroding the land-grant colleges' ability to accomplish agricultural research objectives.

While considering the FY 91 budget request for the National Research Initiative, we submit that pure competitive grants have rarely met needs of traditional production research. We hope that this committee will continue to consider all avenues of funding agricultural research whether it be formula funds, special research grants, or direct appropriations when determining the most effective method for generating and delivering new technology.

Animal and Plant Health Inspection Service

Council delegates also endorsed continuation and expansion, where appropriate, of pest management and eradication programs administered by the Animal and Plant Health Inspection Service (APHIS). Notable among these are efforts to contain the pink bollworm in the western states and to contain or eliminate the boll weevil from other Cotton Belt areas. These programs are exemplary of technology applications sorely needed to reduce plant protection chemical use while enhancing the environment and reducing costs. These programs truly represent a win-win situation for both environmental and production concerns. However, because of the high initial investments, producers need assistance in funding and implementing such large-scale, complex programs.

The proposed 1991 budget recommends a cut of APHIS's pink bollworm budget to $1.087 million. In keeping with the need to continue this important program, we are requesting $4.7 million for APHIS's pink bollworm program.

For over 20 years, California growers have joined APHIS in funding a cooperative pink bollworm containment program. Through comprehensive cultural monitoring and sterile moth release programs, serious pink bollworm outbreaks have been prevented in the San Joaquin Valley.

Moths are reared and sterilized in Phoenix in leased facilities provided by California producers. Equipment, methods, and partial support for operations are furnished by APHIS. Due to notification of loss of the lease and need to replace outdated and worn-out equipment, California growers have purchased new facilities in Phoenix to which rearing operations will be transferred. Total expenditure needs for FY 91 will be $15.680 million (including $2.100 million for facilities expenditure by growers in 1990). The $4.7 million requested above represents USDA's share of this program.

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While not requested in this appropriation, funds may be needed in 1992 to increase rearing capacity up to four times current capabilities to conduct a large-scale pilot suppression and containment program in other areas infested by pink bollworm.

We are pleased that USDA included in its request $9.8 million for continuation of the boll weevil eradication and containment programs. However, the request is not adequate and we are requesting FY 91 appropriations of $13.8 million for APHIS's share for continuing its support programs. The appropriations would provide $1.00 million for the Texas/Oklahoma High Plains boll weevil containment program; $2.0 million for continuing eradication efforts in Arizona; and $10.80 million for eradication costs for Georgia, Alabama and Florida, and containment costs in North Carolina and South Carolina.

These programs, which are cost-shared by growers who pay 70% of program costs, are effective area-wide programs and need to be continued. Farmers in the affected areas strongly support the boll weevil eradication effort begun in their states. When completed, the program will reduce the cost of production, thus increasing U.S. competitiveness in a global economy. The program has demonstrated benefits of coordinated collective efforts of federal and state research, APHIS, cooperative extension, industry, state regulatory agencies, and growers. Though these programs are highly beneficial, they do not work if left up to each grower to act independently.

Continuation of efforts to rid farms of the boll weevil have important ecological and environmental as well as economic benefits. Cotton growers in North and South Carolina are realizing an average net benefit of $60/acre each year since the weevil eradication program was completed. The boll weevil eradication program in these two states has permitted growers to reduce the number of spray applications up to 70% below pre-eradicated levels. These reductions are not only due to virtual elimination of insecticide applications for weevils, but also to fewer applications for other insects. The beneficial insect ecology stays in balance longer into the season and thus fewer chemicals are required. The program also employs modern techniques such as artificial attractants to eliminate the pests where infestations are low, further reducing the need for blanket applications of pesticides.

Expansion efforts initiated in the fall of 1987 into Georgia, southern Alabama and Florida are underfunded in the USDA proposed FY 91 budget. Per-acre costs are greater than USDA's original proposed budget due to late-killing frost dates and mild winters, requiring control operations to be maintained longer and at greater intensity than originally budgeted. Mild winters in 1988 and 1989 were especially responsible for increased costs. Another cause for the southeastern program's budget shortfall was the nearly 50% increase in program acre plantings during the high cost year of 1988 when acreage in the expanded zone was nearly 450,000. Unfortunately, APHIS's original cost projections were based on best-guess planting assumptions of about 300,000 acres. Since the increase in acreage was within the original zones targeted for eradication, which began in 1987, not spraying selected fields was not a biological option.

Though attempted, cost cutting measures in 1988 such as early cessation of control activities proved to be costly and clearly are not viable alternatives for the future. Recent aggressive and innovative steps have been taken by growers in the southeastern states which will provide for significant additional program revenue. However, an increase in the federal share of the effort is needed to allow for a positive cash flow and to protect costly investments to eliminate the weevil.

USDA Export Market Development

On another front, Council delegates unanimously resolved to maximize the authorization of funds for foreign market development. Cotton Council International, the overseas arm of the National Cotton Council, is a participant in both the export Market Development Program of the USDA funded through the Foreign Agricultural Service (FAS) and the Targeted Export Assistance (TEA) Program funded through the Commodity Credit Corporation. These highly effective programs are building and maintaining markets for U.S. cotton. We support funding of at least $115 million as a minimum funding level for the FAS. We urge authorization of funding for the TEA program of $325 million for FY 91 and will request re-authorization in 1990 farm legislation at the level authorized in the Food Security Act of 1985.

Cottonseed products are important income-producers for farmers, ginners and oil mills. We especially appreciate the emphasis on export enhancement for cottonseed oil through the Sunflower and Cottonseed Oil Assistance Program (SCOAP) and fully support funding at a level to insure market competitiveness.

U.S. Department of Commerce

While funding for the Department of Commerce may be beyond the scope of this subcommittee, we want to express appreciation for the continued support of NOAA's Agricultural Weather Services (AWS). Crop management decisions, from planting through harvest, are increasingly based upon AWS data. We are requesting a continuation of funding for NOAA ag weather service centers until innovative alternatives to current systems can be developed, tested in large-scale pilot efforts, and implemented.

Summary

In summary, we are encouraged with the progress of recent years and in the application of new agricultural technology for decreasing costs, improving quality, and addressing environmental concerns. By using every available tool, U.S. agriculture will have a better chance of survival in today's highly competitive world markets. A strong national research and extension program paired with an active international market development program are vital instruments for survival. Adoption of our request for additional support for USDA research, education, and eradication programs will go a long way toward allowing us to meet our competition in the world marketplace.

MONDAY, MARCH 26, 1990.

PORK PRODUCTION

WITNESS

MIKE WEHLER, PRESIDENT, NATIONAL PORK PRODUCERS COUNCIL

Mr. WHITTEN. Mr. Mike Wehler?

Mr. WEHLER. I am Mike Wehler, President of the National Pork Producers Council.

We are very pleased to work with Roger and other good Mississippians in regards to some of these programs, Chairman Whitten.

It is my pleasure on behalf of the pork producers of this country to testify before you here today.

Mr. TRAXLER [presiding]. Pork producers of the Nation and the thumb of Michigan.

Mr. WEHLER. I was about to respond to a meeting where Michigan producers were present at a meeting. I will tell you about some of their thoughts.

U.S. producers believe that the future of our industry is in our own hands. However, we understand that we will need the cooperation of the Federal Government to undertake certain research programs and coordinate national efforts such as the control and eradication of pseudorabies.

We sincerely appreciate the support this committee has provided to the swine industry over the years. The funds have helped form a solid foundation that the pork industry needs to launch into the challenges of the 1990s.

However, we also realize the committee faces budget constraints that can make it difficult to determine funding priorities. It is in this light that we make our comments and hope they will be helpful.

NPPC is confident that we can provide you with a plan of disease eradication and research activities that addresses the most urgent issues facing our industry.

Animal and plant health inspection service (APHIS). APHIS has made substantial contributions to our industry, including their administration of the pseudorabies (PRV) eradication control program.

Swine producers in the country have increased their demand for eradication of PRV. At its 1990 annual meeting, NPPC reaffirmed its strong commitment to the eradication program.

Two primary reasons forced us to increase our budget request for PRV in 1991 to $12.7 million. This level of funding is critical because of the push from states for the PRV program and because APHIS has taken a larger share than expected of the appropriations for their headquarter costs.

There are large numbers of producers with infected herds that are not being served by the program. While in some states, surveillance has not been carried out to the point of even locating all infected herds.

Unfortunately, in 1991 USDA has requested less funds for PRV eradication than what Congress made available to the program in 1990. USDA's low request sends the signal to states that PRV

eradication is not a high enough priority. It is our understanding that state and producer contributions at this time are more than double the USDA appropriation.

NPPC is also concerned about the lack of funding for swine brucellosis. We understand that current reports show only 59 herbs of swine have this disease.

Present funding maintains the disease without stopping it. NPPC believes that swine brucellosis can be eradicated through a three-year program.

Because the overall brucellosis program has provided little funding for swine brucellosis control efforts, we seek line item funding of $3.3 million in fiscal year 1991 to begin moving the swine brucellosis program in 1992.

With significant commitment, we believe the disease will be wiped from the country in 1994.

Agricultural research service (ARS). Pork producers value ARS animal research, and believe consumers and producers benefit from it.

Therefore, NPPC supports ARS's request for increased funding to modernize the facilities at the Agricultural Research Center at Beltsville, Maryland. Time and tight budgets have taken their toll on the Center's facilities, which are now in a deplorable condition.

We also ask that Congress provide $1.2 million to the Meat Animal Research Center in Clay Center, Nebraska, for swine facilities' improvements that are needed for the Center's work.

Cooperative state research service (CSRS). CSRS and other agricultural entities can join to form an ideal partnership to answer many questions facing agriculture.

Therefore, we endorse the Coalition for Advancement of Research on Agriculture, Food and Environment's request for $150 million for the initiative in fiscal year 1991.

We also ask that the initiative's strategy of using six program areas be kept intact and desire that new funding be allocated for this research effort. It should not come at the expense of section 1414 and section 1433 programs.

Food safety and inspection service (FSIS). NPPC has worked closely with FSIS and believes this cooperation is critical to the continued ability of producers to market their swine.

We rely heavily upon the agency to set standards that will increase consumer confidence in our product. We ask that the committee notes that NPPC is opposed to user fees on food inspection.

Regarding the Extension Service, NPPC encourages funding that will allow the Extension Service to help transfer information to consumers as well as producers.

We see a clear need for an accelerated program of technical, educational and financial assistance at the local level to promote best management practices for groundwater quality.

Regarding the Foreign Agriculture Service, we appreciate the efforts of the FAS, particularly in areas such as the Targeted Export Assistance program.

TEA funding helped the United States increase our pork exports by 47 percent in 1989 above 1988 levels.

NPPC would like to see FAS also utilize its Export Enhancement program funds to respond to unfair trade practices in pork.

Section 1128 of the 1985 Farm Bill stated that the Secretary of Agriculture "shall seek to expend annually at least 15 percentum of the total funds available" of the EEP to encourage sales of poultry, beef and pork. Yet, the program has not been used for pork or beef.

Regarding the Food and Drug Administration, our experience with the FDA's Center for Veterinary Medicine show that they need more funding and staff than they have been allotted in the past.

The role of the Center is growing in importance as we face questions on drug residues and new technology.

We believe that the FDA budget should include at least a $1 million increase for the Center for Veterinary Medicine.

In conclusion, NPPC thanks the committee for listening to our concerns today.

With your assistance, pork producers can cooperate with the Government to build upon U.S. capabilities in many vital areas.

Mr. TRAXLER. Thank you very much for that fine statement, Mr. Wehler.

Let me say that the committee looks at the budget very carefully, of course. It is our reason for existence.

Last year the committee appropriated $1,393,000,000 for research and extension.

The budget request was $1,360,000 from the President, and if we do the $100 million add-on for the advancement of research on agriculture, food and environment, we have to find it somewhere.

We have to take it from someplace, and if we take it from the research that the Congress adds at the request every year of various commodity groups, whether it is fruit or vegetables or what particular crop, doesn't especially matter—we will hear from them.

The difficulty here is that while it is an initiative of keen interest to us, the problem is finding the money for it.

It is a new program in a sense, not entirely. It is something the committee has funded in the past and will continue to do so in the future, but this is different in the sense that it lays out six areas of specific research and not a bad idea.

Our problem is coming up with the money. That is going to be a tough one this year. Probably this is the most difficult budget year Congress has yet confronted and I don't know how it is going to come out.

Mr. WEHLER. I understand that very much.

Mr. TRAXLER. When I say the Congress, I mean the Administration as well.

We have to satisfy the President. He gets about 97 percent of what he wants.

Mr. WEHLER. On the pork side, we rely heavily on research being a free market-oriented industry. It is efficiency that determines survivability.

Although our check-off program seems to be helping us on the demand side in the end we are measured by efficiency and it is those competitive grants that have adequate peer review that are very important to us.

By the way, we do fund a significant amount of research dollars through the check-off program as well.

Mr. TRAXLER. Clearly, pork producers are a very important segment of American agriculture and we want to make sure that you stay healthy.

Thank you again.

Mr. WEHLER. Thank you, Mr. Chairman.

[Mr. Wehler's prepared statement follows:]

NATIONAL PORK PRODUCERS COUNCIL
LEGISLATIVE AFFAIRS
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Statement of the

NATIONAL PORK PRODUCERS COUNCIL

Before the

Subcommittee on Rural Development,
Agriculture, and Related Agencies

Committee on Appropriations

U.S. House of Representatives

on

Fiscal Year 1991 Agriculture Appropriations

March 26, 1990

Presented By: Mike Wehler, President
National Pork Producers Council
Plain, Wisconsin

Mr. Chairman and Members of the Committee:

Thank you for this opportunity to testify before you today on the Fiscal Year 1991 appropriations for the U.S. Department of Agriculture. As president of the National Pork Producers Council (NPPC), I commend you for your strong support of the pork industry.

I will be testifying on behalf of NPPC, which represents 100,000 pork producers and their families in 45 states that are affiliated with the national organization. NPPC is the largest commodity dues-paying organization in the United States and accounts for more than 90 percent of the nation's commercial pork production.

U.S. pork producers believe that the future of our industry is in our own hands. However, we understand that we will need the cooperation of the federal government to undertake certain research programs and coordinate national efforts such as the control and eradication of pseudorabies.

We appreciate the agricultural appropriations allocated in previous years. The funds have provided for control and eradication programs that helped agriculture to combat diseases and pests in animals and plants. Federal appropriations also fostered vital research. NPPC recognizes the need for further scientific studies to advance our finished product -- pork -- along with the ongoing swine production research. Many of these efforts form a solid foundation that the pork industry needs to launch into the challenges of the 1990s. However, we also realize the Committee faces budget constraints that can make it difficult to determine funding priorities. It is in this light that we make our comments and hope they will be helpful. NPPC is confident that we can provide you with a plan of disease eradication and research activities that address the most urgent issues facing our industry. Based on these priorities, we can continue to supply an important protein source at a reasonable price to the consumer.

Animal and Plant Health Inspection Service (APHIS)

We strongly endorse the mission of the Animal and Plant Health Inspection Service to enhance our nation's economy and public health through the development and implementation of animal health and care programs. APHIS has made substantial contributions to our industry, including their administration of the pseudorabies (PRV) eradication control program. We would like to especially express our gratitude to this committee for its favorable response to our requests for PRV funding in previous years.

There is considerable demand building by the swine producers in the country, especially in the large hog producing states, to eliminate PRV. As the members of this committee know, the shorter the time it takes to eradicate an animal disease, the less costly it becomes. Moreover, the length of time to eradicate a disease is often related to the degree of producer desire to accomplish it. At its 1990 annual meeting, NPPC reaffirmed its strong commitment to the eradication program.

When we developed the initial 10-year budget in 1987, we originally planned to seek $6.8 million for PRV in 1991. However, our experience with the 1990 allocation proved that APHIS headquarter costs and state interest in the program exceeded expectations. Thus, we are forced to increase our budget request for PRV to $12.7 million.

Unfortunately in 1991, USDA has requested less funds for PRV eradication than what Congress made available to the program in 1990. USDA's low request sends the signal to states that PRV eradication is not a high enough priority. It is our understanding that state and producer contributions at this time are more than the USDA appropriation.

Despite the current federal and state funding, there are large numbers of producers with infected herds that are not being served by the program. While in other states, surveillance has not been carried out to the point of even locating all infected herds. In the latter case, swine movements from these undetected infected herds can spread the disease within their state and across the country, which increases the cost of the program.

We understand that APHIS supports this much needed program and have commended us in our efforts in developing the PRV eradication plan. We suggest that the committee inquire within USDA to learn what funds were requested by Veterinary Services, APHIS and USDA before the final decision was made to request less funds than was available in 1990 for PRV eradication.

Less money for PRV in the 1991 budget is not the only weight pulling down the progress of this eradication program. Even though the 1990 budget provided $600,000 more in federal funds than the 1989 budget, less total money was allocated to the states due to increased headquarter costs. It is our understanding that this is due to the USDA/APHIS budget process.

NPPC strongly believes that the APHIS budget process needs a thorough review. We understand that other commodity organizations have expressed this same view. The APHIS budget process may be satisfactory for accounting purposes, but it is totally impractical when dealing with the control and eradication

of animal diseases. At a hearing held by the Senate Agriculture Subcommittee on Nutrition and Investigations in January, a review of the APHIS budget process was proposed. We hope this committee will pursue a similar course of action.

As we mentioned in last year's testimony, NPPC is also concerned about the lack of funding for swine brucellosis. We understand that current reports show only 59 herds of swine have this disease. Yet, a shortage of federal funds lets these few herds stand in the way of total eradication of swine brucellosis in the United States. Present funding maintains the disease without stopping it. Therefore, APHIS program costs and producer costs from swine brucellosis go on indefinitely. NPPC believes that swine brucellosis can be eradicated through a three-year program. The overall brucellosis program has provided little funding for swine brucellosis control efforts. Therefore, we seek line item funding of $3.3 million in FY91 to begin moving the swine brucellosis program in 1992. With significant commitment, we believe the disease will be wiped from the country in 1994.

APHIS also has many other vital programs that affect the pork industry. Therefore, we support the Administration's requests' of $3.417 million for the Swine Health Protection Program, which provides much needed surveillance of threatening diseases such as hog cholera from entering this country. We also encourage Congress to meet USDA's request of $6.5 million for the APHIS Biotechnology Program because of the need to evaluate new biotechnology products. NPPC also supports the Administration's request of $9.2 million for the Animal Disease Detection effort. This key program area prepares the entire United States for disease emergencies and includes other programs with long-term benefits for animal agriculture.

Agricultural Research Service (ARS)

Pork producers value ARS animal research, and believe consumers and producers benefit from it. Therefore, NPPC supports ARS's request for increased funding to modernize the facilities at the Agricultural Research Center at Beltsville, Maryland. Swine producers from around the world have heard of the Center's accomplishments. Yet, the facilities are a national embarrassment, especially when viewed by foreign guests. Time and tight budgets have taken their toll on the Center's facilities, which are now in a deplorable condition. The swine research facilities are approximately 50 years old, and progressive swine research is ham strung by such deteriorated facilities.

We also want to emphasize our support of the continuation and expansion of research that lowers costs and enhances swine productivity through improved genetics and breeding. Therefore,

we are disappointed that USDA did not request an increase at the Meat Animal Research Center (MARC) in Clay Center, Nebraska. USDA conducts much of its pork production research at MARC, so this facility is key to our industry. MARC research will improve our diagnostic capabilities to test and identify genetically controlled cellular immune components. We are also interested in MARC's studies on genetic mapping that affect litter size and breeds of swine that are resistant to disease and parasites. Therefore, we ask that Congress provide $1.2 million to MARC for swine facilities improvements that are needed for MARC's work.

NPPC is also particularly interested in ongoing studies at National Animal Disease Center in Ames, Iowa, on respiratory diseases, trichinosis, enteric diseases and atrophic rhinitis, which all cause major losses to the pork industry.

ARS also needs funding to conduct food safety studies that will address the public's questions on the wholesomeness and safety of our food supply. NPPC has seen the need to initiate our own food safety efforts, such as the checkoff-funded Quality Assurance Program to help eliminate drug residues. However, more government scientific data is critical to consumers and producers alike. Therefore, we fully support the increase of $10 million proposed by USDA for food safety research.

Cooperative State Research Service (CSRS)

CSRS and other agricultural entities can join to form an ideal partnership to answer many questions facing agriculture. The National Initiative for Research and Environment proposes to take advantage of this system to answer many of agriculture's most pressing questions. NPPC believes that this effort can serve as an excellent guide to meet many of our industry's needs for research. The program could provide competitive research grants that would answer critical questions on food safety, water quality, product development and more. Additional research funding is critical to provide a scientific basis to guide agriculture through this maze of questions and allow the United States to take advantage of international marketing opportunities.

Therefore, we endorse the Coalition for Advancement of Research on Agriculture, Food and Environment's request for $150 million for the initiative in FY91, of which $30 million is allocated to animal systems. We also ask that the Initiative's strategy of using six program areas be kept intact. NPPC approves of organizing the Initiative into the areas of natural resources and environment; nutrition, food quality and health; new products, processes and research to add value to raw products; markets, trade and policy; plant systems and animal systems. We ask that

new funding be allocated for this research effort. It should not come at the expense of Section 1414 and Section 1433 programs that have proven so valuable to agriculture.

NPPC recommends that Congress provide $5.731 million for Section 1433 research, as recommended by the National Association of State Universities and Land-Grant Colleges (NASULGC).

Food Safety and Inspection Service (FSIS)

NPPC has worked closely with FSIS and believes this cooperation is critical to the continued ability of producers to market their swine. We rely heavily upon the agency to set standards that will increase consumer confidence in our product. NPPC's cooperation with FSIS has accomplished several achievements, such as reducing sulfamethazine residue levels in hog carcasses to less than 1 percent in 1989. NPPC will continue to be involved with FSIS as they develop the Hazard Analysis Critical Control Point (HACCP) program for meat inspection. We ask that the committee notes that NPPC is opposed to user fees on food inspection.

Extension Service (ES)

The Extension Service has a long and impressive record of assisting the transfer of new technology from the research arena to the farm level. Agriculture is on the brink of many new endeavors in critical areas, such as groundwater quality and food safety where the Extension Service can replay its vital role.

NPPC encourages funding that will allow the Extension Service to help transfer information to consumers as well as producers. We see a clear need for an accelerated program of technical, educational and financial assistance at the local level to promote best management practices for groundwater quality. The Extension Service could deliver a broad based education and outreach program on water quality to producers.

Foreign Agriculture Service (FAS)

We appreciate the efforts of the FAS, particularly in areas such as the Targeted Export Assistance (TEA) program. TEA funding helped the United States increase our pork exports by 47 percent in 1989 above 1988 levels. Total U.S. pork exports were valued at $460.2 million in 1989.

NPPC would like to see FAS also utilize its Export Enhancement Program (EEP) funds to respond to unfair trade practices in pork. Section 1128 of the 1985 Farm Bill stated that the Secretary of

Agriculture "shall seek to expend annually at least 15 percentum of the total funds available" of the EEP to encourage sales of poultry, beef and pork. Yet, the program has not been used for pork or beef. Recent increases in European pork subsidies certainly justify the U.S. pork industry's request for the Secretary of Agriculture to use EEP funding to counteract these trade-distorting subsidies.

Food and Drug Administration (FDA)

FDA's Center for Veterinary Medicine plays a key role in many issues that are of concern to producers and consumers. Biotechnology advancements, such as porcine somatotropin, will even further FDA's involvement in food safety and other issues. Public confidence partially rests upon FDA's knowledge and statements. Therefore, FDA must have appropriate funding and staff to develop and present a scientific analysis of new products and practices.

NPPC frequently interacts with the Center for Veterinary Medicine, and our experiences show that they need more funding and staff than they have been allotted in the past. Their ability to respond, even on issues of great importance, has been restricted by limited funding. Yet, the role of the Center is growing in importance as we face questions on drug residues and new technology. The nation's pork producers will continue to rely on the Center for vital information on field inspections, good management practices and more. To fulfill these basic responsibilities, we believe that the FDA budget should include at least a $1 million increase for the Center for Veterinary Medicine.

We do not endorse user fees as a partial means of financing FDA activities. FDA funding is needed so that government agencies can enforce regulations along with the efforts of the free enterprise system to police itself. Such action reinforces consumer confidence.

Conclusion

NPPC thanks the Committee for its support of the many programs discussed here today. With your assistance, pork producers can cooperate with the government to build upon U.S. capabilities in food safety, international competitiveness and many other vital areas.

MONDAY, MARCH 26, 1990.

SOIL AND WATER RESEARCH

WITNESSES

RICHARD FOSSUM, BOARD OF DIRECTORS, EASTERN SOUTH DAKOTA SOIL AND WATER RESEARCH FARM, INC.

EUGENE BOER, BOARD OF DIRECTORS, EASTERN SOUTH DAKOTA SOIL AND WATER RESEARCH FARM, INC.

Mr. TRAXLER. Richard Fossum and Eugene Boer, appearing on behalf of Eastern South Dakota Soil and Water Conservation Research Farm and the Barnes Aastad Soil and Water Research Association.

We will put your entire statement in the record and you may proceed in any fashion you wish.

Mr. FOSSUM. Thank you for the privilege and opportunity to once again appear before this subcommittee.

We represent the Eastern South Dakota Soil and Water Research Farm, Inc. of Brookings, South Dakota.

As active farmers and members of the Board of Directors of this corporation, we are committed to promote and sponsor agricultural research.

We are particularly interested in the development of more efficient farm production practices that will conserve and protect our valuable resources of land and water.

Our directors represent over one-third of the farming community of South Dakota; we are elected representatives of 15 soil and water conservation districts.

Since 1959, our membership has aggressively assisted and promoted research programs of the USDA Agricultural Research Service, especially those at the Northern Grain Insects Research Laboratory at Brookings, South Dakota, and the North Central Soil Conservation Research Laboratory at Morris, Minnesota.

We are also committed to support programs of the Agricultural Experiment Station at South Dakota State University at Brookings, South Dakota.

To assist these important research organizations, our membership committed nearly all its resources, over 40,000, to purchase and help develop a research farm located approximately one mile from South Dakota State University and the Northern Grain Insects Research Laboratory.

This farm supports research for ARS and SDSU and serves as a unique center in the Northern Great Plains for multidisciplinary agricultural research.

The combined strength of the two ARS facilities and SDSU provides a critical mass of scientists and technicians, entomologists, soil and water scientists, agronomists, plant physiologists, agricultural engineers, economists, and extension agents, to develop practical solutions for our farming problems.

South Dakota farmers are faced with many challenging problems, but two that deeply concern our members are the erosion of our soils and the contamination of our water with chemical pesticides and fertilizers.

These problems threaten the long-term productivity of our farms and the health of our families and communities.

We are encouraged by the progress made by ARS and the land grant universities, but we must do more to resolve these problems.

For example, at the Northern Grain Insects Research Laboratory, development of a new control method for corn rootworms could reduce the insecticides used in U.S. field crops by 40 percent.

The North Central Soil Conservation Research Laboratory, Morris, Minnesota, and South Dakota State University are also making significant contributions toward protecting the quality of our water and environment through the development of a production systems model and an agricultural non-point source pollution model.

However, additional funds are needed to support these critical research programs.

We request that Congress provide $100,000 to purchase 80 acres of land that is adjacent to our farm and $300,000 to augment a new research initiative on our farm.

This initiative will develop new crop production systems that are economically sustainable for the Northern Great Plains and protective of our precious soil and water resources.

The one-time grant of $100,000 should be awarded to South Dakota State University to purchase the 80 acres adjacent to our farm; current research needs far exceed the space available on our farm.

The remaining $300,000 should be directed to the ARS programs at Brookings, South Dakota, and Morris, Minnesota.

We urge you to seriously consider our request. With your help, we can dramatically improve the profitability and safety of American agriculture.

Thank you.

Mr. TRAXLER. Thank you, gentlemen.

That is a very fine statement and we are aware of the problem and you can be sure we will do the very best we can for you.

The Congressman has already testified. We are not rich around here, needless to say.

Mr. FOSSUM. No, you have a tough job.

Mr. TRAXLER. Yours isn't easy either.

Thank you very much.

[Mr. Fossum's prepared statement follows:]

Statement of the Eastern South Dakota Soil and Water Research Farm, Inc.
Brookings, South Dakota

to the
House Appropriations Committee
Subcommittee on Agriculture, Rural Development, and Related Agencies
102nd Congress

March 1990

presented by Richard Fossum and Eugene Boer

Thank you for the privilege and opportunity to once again appear before this subcommittee. We represent the Eastern South Dakota Soil and Water Research Farm, Inc. of Brookings, South Dakota. As active farmers and members of the Board of Directors of this corporation, we are committed to promote and sponsor agricultural research. We are particularly interested in the development of more efficient farm production practices that will conserve and protect our valuable resources of land and water. Our Directors represent over one-third of the farming community of South Dakota; we are elected representatives of 15 Soil and Water Conservation Districts.

Since 1959, our membership has aggressively assisted and promoted research programs of the USDA Agricultural Research Service (ARS), especially those at the Northern Grain Insects Research Laboratory at Brookings, South Dakota, and the North Central Soil Conservation Research Laboratory at Morris, Minnesota. We are also committed to support programs of the Agricultural Experiment Station at South Dakota State University (SDSU) at Brookings, South Dakota. To assist these important research organizations, our membership committed nearly all its resources (over 40,000) to purchase and help develop a research farm located approximately one mile from South Dakota State University and the Northern Grain Insects Research Laboratory. This farm supports research for ARS and SDSU and serves as a unique center in the Northern Great Plains for multidisciplinary agricultural research. The combined strength of the two ARS facilities and SDSU provides a critical mass of scientists and technicians (entomologists, soil and water scientists, agronomists, plant physiologists, agricultural engineers, economists, and extension agents) to develop practical solutions for our farming problems.

South Dakota farmers are faced with many challenging problems but two that deeply concern our members are the erosion of our soils and the contamination of our water with chemical pesticides and fertilizers. These problems threaten the long-term productivity of our farms and the health of our families and communities. We are encouraged by the progress made by ARS and the land grant universities but we must do more to resolve these problems. For example, at the Northern Grain Insects Research Laboratory, development of a new control method for corn rootworms could reduce the insecticides used in U.S. field crops by 40%. The North Central Soil Conservation Research Laboratory, Morris, Minnesota, and South Dakota State University are also making significant contributions toward protecting the quality of our water and environment through the development of a production systems model and an agricultural nonpoint source pollution model. However, additional funds are needed to support these critical research programs.

We request that Congress provide $100,000 to purchase 80 acres of land that is adjacent to our farm and $300,000 to augment a new research initiative on our farm. This initiative will develop new crop production systems that are economically sustainable for the Northern Great Plains and protective of our precious soil and water resources. The one-time grant of $100,000 should be awarded to South Dakota State University to purchase the 80 acres adjacent to our farm; current research needs far exceed the space available on our farm. The remaining $300,000 should be directed to the ARS programs at Brookings, South Dakota, and Morris, Minnesota.

We urge you to seriously consider our request. With your help, we can dramatically improve the profitability and safety of American Agriculture.

Thank you.

STATEMENT OF THE BARNES-AASTAD

SOIL AND WATER CONSERVATION RESEARCH ASSOCIATION, INC.

Morris, Minnesota

presented by

Willard R. Micklish and John F. Stock, M.D.

to the

House Appropriations Committee

Subcommittee on Agriculture, Rural Development
and Related Agencies

102nd Congress

March, 1990

As active board members of our association of concerned farmers and agri-businessmen, we speak to the problems of agriculture in the northern Corn Belt. Our interest in conserving the nation's soil and water resources prompts us to support USDA-ARS research in soil and water conservation and in particular of the ARS research conducted at the North Central Soil and Water Conservation Research Laboratory, Morris, Minnesota. The research program is directed at national and regional concerns that assist farmers in improving soil and water conservation and increasing the efficiency of agricultural production. We strongly support the research mission to develop sustainable production systems for northern climates while maintaining and improving the quality of our soil and water resources. The research involves cooperative efforts with the agricultural experiment stations of the University of Minnesota, South Dakota State University, and the USDA Northern Grain Insects Research Laboratory at Brookings, South Dakota.

With increased emphasis being placed on improving water quality in our nation together with continued emphasis on farmer profitability, it is imperative that the research community moves boldly forward to address these concerns. Great risks exist to both our surface and groundwater resources from contamination due to agricultural chemicals, both nutrients and pesticides. At the same time, farmers are experiencing undue financial risks from inadequate fertility during critical plant growth periods and from pests, mainly weeds and insects. It is not simply a matter of applying more chemicals to control pests or eliminating pesticide use

entirely because both extremes have serious financial consequences for the public. Obviously, an optimum intermediate solution needs to be attained. Unfortunately, much new knowledge needs to be obtained before such recommendations can be made with confidence.

An analogous point can be made with respect to soil compaction. Practically every acre of farm land in the United States is subjected to wheel traffic of agricultural machinery. There is increasing evidence that this wheel traffic is slowly increasing the density of even our most productive soils. Further more, this compaction often extends deeper than most tillage operations and can persist for several years in spite of annual freezing and thawing. This compaction significantly decreases infiltration rates of water into the soil and leads to increased water runoff. Deep compaction often limits root growth. In periods of water stress, such as we are currently experiencing in much of the Corn Belt and Central Plains, a limited root system contributes to plant water stress and reduced growth. Scientists and engineers at the Morris Lab are working on assessing the economic impact of this soil compaction, and developing ways to balance the negative aspects of farm mechanization against the benefits offered by large efficient machinery.

The Agricultural Research Service in general, and the Morris laboratory in particular, have recently expanded their research efforts in the areas of water quality, pesticide and nutrient management and soil compaction to address current needs of the U.S. public. This has put a serious strain on the physical plant at the Morris Lab in terms of office and laboratory space. In order to continue the productive and relevant research currently being done, and to accommodate increased activity in the above mentioned area, the Barnes-Aastad Association is asking that $300,000 be designated in FY91 to plan an expansion for the Morris Laboratory.

MONDAY, MARCH 26, 1990.

FOOD ANIMAL RESEARCH

WITNESS

ROBERT G. ZIMBELMAN, FEDERATION OF AMERICAN SOCIETIES OF FOOD ANIMAL SCIENCES

Mr. TRAXLER. Dr. Zimbelman, representing the Federation of American Societies of Food Animal Sciences.

We will put your entire statement in the record.

We appreciate your brochure on food animal research priorities.

Dr. ZIMBELMAN. Very good.

We appreciate the opportunity to have some input today into the appropriations process.

I am testifying on behalf of the Federation of American Societies of Food Animal Sciences, a newly formed federation of four long-standing professional societies representing animal science, dairy science, poultry science, and meat science.

We felt we should try to give you a constant message rather than a bunch of different messages.

Our members are involved in research, teaching, and extension in universities, in private industry and in Government.

One of the initial activities we did was the document which you mentioned on research priorities.

There is a lot of detail there about what we want to achieve and how to achieve it.

Perhaps it is too technical. I will summarize the public impact of those.

The first priority is for research to produce animal products of superior quality, which includes a lower fat content, an improved protein quality or content, or other changes to alter our products to meet nutritional needs and consumer desires.

We have made a lot of progress in one area with increased leanness of pigs given porcine somatropin.

However, that progress has been made in the absence of much basic information about how animals divide nutrients towards protein and fat production.

A greater understanding will aid the future progress, beyond the somatropins, toward customizing products for human needs and desires.

Our second research priority concerns the nutritional role and safety of animal foods for the American public.

Although major degenerative diseases are multi-factorial, they have dietary components.

Animal products need not be eliminated from the diet to meet current nutritional recommendations, despite what some persons say.

Animal products, now and in the future, can meet nutritional requirements for protein, vitamin, and minerals, especially trace minerals, without impacting negatively on human health.

The major food safety problem is clearly from pathogenic microorganisms.

Development of methods, particularly those from new biotechnological approaches, to detect and trace organisms can lead to an even safer food supply.

Our third priority concerns the use of biotechnology to enhance genetic progress.

Genetic progress can improve animal performance, influencing the quality of animal products as well as safety.

Engineering disease resistance into animals should yield great potential economic and health benefits for both animals and people.

Our fourth priority concerns physiological functions related to reproduction, fetal development, and behavior. The nervous system in animals impacts upon the animal's performance and behavior in ways which are not understood.

It will remain difficult to capitalize on some biotechnology techniques until we have a deeper understanding of normal development or development or behavior. A greater understanding of behavior would also allow us to better answer questions relating to animal welfare.

Many of the complaints about animal welfare are based upon a person's suggestions, but unfortunately we don't always have the scientific information, even though the experience of animal scientists and producers indicates those are not of concern.

Animal production is an integral part of sustainable agriculture that is vital to the competitive position of U.S. agriculture in the world.

According to "Designing Foods," a report from the National Academy of Sciences, animal products are the major contributor of protein and many B vitamins and minerals to the human diet.

If the world population reaches 10 billion in approximately 2025 compared to our current 5 billion, animal products will be a necessity for many of those people.

We could lose our lead in animal agriculture productivity to other countries if we do not stay head in the development and application of new technology.

Animals also convert natural resources, such as range, forage, and food processing by-products into food for human consumption.

Such resources would be completely wasted or would represent disposal challenges without animal agriculture.

We, like the other groups, are aware of the National Academy of Sciences report suggesting $500 million in competitive grants.

We are a member of the Coalition to support that and believe it is an appropriate time to seriously consider the issue of level of funding.

As Mr. Whitten mentioned, agriculture has been in a shrinking mode for a long time and we have suffered those things.

We think that maybe it is time to get serious and look at that, that things have changed.

In contrast to other departments, the USDA currently provides less than 5 percent of its research support in terms of competitive grants.

In addition, the dollar level is markedly lower than most other agencies.

The $500 million competitive grants for agriculture to less than 40 percent in contrast to biomedical research where more than 80 percent is typically in competitive grants.

This new initiative should not be achieved at the expense of formula funds or Agricultural Research Service funds.

Even these are much less in magnitude than that for defense, biomedical research, and energy.

Therefore, our membership concluded that it is essential that the competitive grants program be expanded with new money.

We do not have an alternative figure to that in the NRC report as we feel that the $500 million is totally justified by the importance of agriculture, the current funding situation, and the need to increase the competitive grant component of USDA budget.

Should not access to an economical, safe and healthful diet produced with attention to preservation of our resources be worthy of greater commitment from our elected leaders?

We recognize that it is the job of Congress to make hard decisions and we recognize the difficulty you are faced with in doing so.

We feel you need not be apologetic to support a magnitude of this increase at a time of tough financial times. Certainly the feeding of the American public has broad implications in health, welfare, competitiveness, and even defense. "An army travels on its stomach."

When considering where the funds might come from, I know that you have a big challenge, as I said before, but we would hope you might compare agricultural research to improve the food supply to such large projects as strategic defense initiative, the superconducting supercollider, the NASA space station, and other such projects requiring massive expenditures for science.

We recognize that the "peace dividend" has been presumed by many groups to have potential for funding many other projects.

We know that you must balance various needs, but please ask yourselves as to why past funding has been so inadequate and support an increased share for funding this very necessary agricultural research initiative.

We appreciate the chance to have some input.

My name and phone number are on the testimony. If I can provide information now, answer questions now, or provide information later, I would be pleased to do so.

Mr. TRAXLER. I would say that you are sort of inferentially raising an interesting question that is a troublesome one for the Congress.

The mega-science initiatives all run massive cost overruns. It isn't a question of their initial cost as outlined to us by the various agencies that are responsible for their development, but we have seen consistently that those numbers given us in early stages of the program to get started often are at least three times under the full finished cost.

One gets a sense that we are being rolled.

At OMB, they have to have a consequence and it is a troublesome one for those of us in the Congress.

We have cautioned these people, but it doesn't seem to do any good. They get their foot in the door and they have a national con-

stituency within the Congress and it almost takes on in some people's mind the more you spend, the happier they are.

They think I am helping my local economy. The process is skewed. It is not one that we can be proud of and those additional costs have to come from somewhere.

We have to find them somewhere and often as not they come from within other science categories, little science.

Dr. ZIMBELMAN. We appreciate the problem you have.

Here is a magazine for scientists which is for broad science and their headlines talk about big increases for NSF, NASA, the gnome project, and supercollider.

It depends on your perspective based on what you have done in other years. It is a big increase, but based on other programs, it is a decimal.

That is what is hard for agricultural scientists to understand.

We have struggled for a long time and understand your problem in trying to do that much more, but at the same time we feel maybe we can finally make the case and with the new events of biotechnology, we don't have much time to continue as we have.

Mr. TRAXLER. We appreciate your testimony.

Thank you very much.

[Dr. Zimbelman's prepared statement follows:]

TESTIMONY

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT,
AGRICULTURE, AND RELATED AGENCIES

HOUSE OF REPRESENTATIVES
COMMITTEE ON APPROPRIATIONS

ON BEHALF OF

FEDERATION OF AMERICAN SOCIETIES OF
FOOD ANIMAL SCIENCES

BY

DR. ROBERT G. ZIMBELMAN
EXECUTIVE VICE PRESIDENT

AMERICAN SOCIETY OF ANIMAL SCIENCE

MARCH 26, 1990

We appreciate the opportunity to provide input to the appropriations process for Rural Development, Agriculture, and Related Agencies. This testimony is provided on behalf of the Federation of American Societies of Food Animal Sciences (FASFAS). We are a newly formed federation of four long standing professional societies deeply involved in animal agriculture, namely: American Dairy Science Association (ADSA), American Meat Science Association (AMSA), American Society of Animal Science (ASAS), and Poultry Science Association (PSA). The combined membership of these four societies exceeds 17,000. A major purpose of our federation is to speak with one voice on animal agriculture issues. This has not always occurred in the past. We felt that it was a disservice to policy makers, such as yourselves, when you heard a variety of messages which were not necessarily supportive, or perhaps were contradictory.

Our members are involved in research, teaching, and extension in universities, in private industry and in government. Therefore, we have an interest in the total spectrum of animal agriculture including, in particular, federal funding for research and extension.

An initial activity, prior to formalization of the federation, was the issuance of a document on research priorities. Attached to this testimony is a copy of these Food Animal Research Priorities issued by a task force representing the four societies. The following summary of potential impact on the public, as well as a description of the scientific approaches from the brochure, is provided for these four major priorities.

1) Our first priority is for research to produce animal products of superior quality. Quality includes a lower fat content, an improved protein quality or content, or other changes to alter our products to meet nutritional needs and consumer desires. Progress already been made in some regards, particularly given regard to increased leanness of pigs with porcine somatropin. However, that progress has been made in the absence of much basic information about how animals divide nutrients towards protein and fat production. A greater understanding will aid the future progress, beyond the somatropins, toward customizing products for human needs and desires.

2) Our second research priority concerns the nutritional role and safety of animal foods for the American public. Human nutrition has become a much more important part of the process by which people plan their daily diets and their choice in what they eat. Although major degenerative diseases are multi-factorial, they have dietary components. Animal products need not be eliminated from the diet to meet current nutritional recommendations, despite what some persons say. Animal products, now and in the future, can meet nutritional requirements for protein, vitamin, and minerals, especially trace minerals, without impacting

negatively on human health.

The major food safety problem is clearly from pathogenic microorganisms. Research to understand and ameliorate this problem will have a broad impact on the public. Development of methods, particularly those from new biotechnological approaches, to detect and trace organisms can lead to an even safer food supply.

3) Our third priority concerns the use of biotechnology to enhance genetic progress. Genetic progress can improve animal performance, influencing the quality of animal products as well as safety. Engineering disease resistance into animals should yield great potential economic and health benefits for both animals and people. The ability to modify the genetics of the farm animals, as well as microorganisms which interact with them in both beneficial and detrimental ways, should ensure the future availability of animal protein for people. Much as a human genome project has potential to help with human disease problems, greater understanding of the genome of farm animals will aid in making progress in this regard.

4) Our fourth priority concerns physiological functions related to reproduction, fetal development,and behavior. The nervous system in animals impacts upon the animal's performance and behavior in ways which are not understood. It will remain difficult to capitalize on some biotechnology techniques until we have a deeper understanding of normal development or behavior. A greater understanding of behavior would also allow us to better answer questions relating to animal welfare, an issue of much concern to both Congress and the general public. Current understanding of behavior and indicators of well being do not always allow us to refute or support certain claims about animal well being.

Animal production is an integral part of sustainable agriculture that is vital to the competitive position of US agriculture in the world. A strong animal industry is strategic to nutrition and health of people. Past research findings have paid big dividends and have provided breakthroughs and specialized knowledge concerning new production techniques and products.

We are quite aware that some persons question the need for animal products in our diet. There is a "vegan" movement which declares that animal products are not needed for leather or other by-products, or for food. They state that all animals should be turned free. From their viewpoint, all of us should live on a vegetarian diet. According to "Designing Foods", a report from the National Academy of Sciences, animal products are the major contributor of protein and many B vitamins and minerals to the human diet.

Some say that we are consuming more protein than needed. It is better that we have some excess than large deficiencies. Vitamin B-12 is not available in plant foods and some minerals like iron and zinc, are more bioavailable in animal products. It is apparent that some persons choose not to include animal products in their diet. For most Americans, though, animal products taste good, they have a good texture, and they are enjoyable to consume. If animal products are to remain an important and economic component of the public diet, then research to improve them at more affordable cost is justified.

If the world population reaches 10 billion in approximately 2025 compared to our current 5 billion, animal products will be a necessity for many of those people. We think it is important, at this point, to continue to make improvements in animal products for this country as well as for other countries in the world. Other countries in the world have cheaper land resources, as well as lower cost of labor and capital. We could lose our lead in animal agriculture productivity to other countries if we do not stay ahead in the development and application of new technology. Animals also convert natural resources, such as range, forage, and food processing by-products into food for human consumption. Such resources would be completely wasted or would represent disposal challenges without animal agriculture.

The National Academy of Sciences recently issued a report entitled "Investing in Research: A Proposal To Strengthen the Agricultural, Food, and Environmental System". We support their recommendation of $500 million in competitive grants. As a member of CARAFE (Coalition for the Advancement of Research for Agriculture, Food, and the Environment), we are supportive of their proposals to date. We recognize that this is a era of huge deficits with significant need for funds for many programs. Yet, agricultural research has been underfunded for so many years, we feel that it is an appropriate time to seriously consider the issue of level of funding.

In contrast to other departments, the USDA currently provides less than 5 percent of its research support in terms of competitive grants. In addition, the dollar level is markedly lower than most other agencies. The $500 million competitive grants would raise the proportion of competitive grants for agriculture to less than 40 percent in contrast to biomedical research where more than 80 percent is typically in competitive grants. This new initiative should not be achieved at the expense of formula funds or Agricultural Research Service funds. Even these are much less in magnitude than that for defense, biomedical research, and energy. Therefore, our membership concluded that it is essential that the competitive grants program be expanded with new money.

We do not have an alternative figure to that in the NRC report as we feel that the $500 million is totally justified by the importance of agriculture, the current funding situation, and the need to increase the competitive grant component of USDA budget. Should not access to an economical, safe, and healthful diet produced with attention to preservation of our resources be worthy of greater commitment from our elected leaders? We recognize that it is the job of Congress to make hard decisions and we recognize the difficulty you are faced with in doing so. We feel you need not be apologetic to support a magnitude of this increase at a time of tough financial times. Certainly the feeding of the American public has broad implications in health, welfare, competitiveness, and even defense. "An army travels on its stomach."

When considering these questions, you might consider the following issues:

Compare agricultural research to improve the food supply to such large projects as Strategic Defense Initiative (SDI), the Superconducting Supercollider (SSC), the NASA Space Station, and other such projects requiring massive expenditures for science. We recognize that the "peace dividend" has been presumed by many groups to have potential for funding many other projects. We know that you must balance various needs, but please ask yourselves as to why past funding has been so inadequate and support an increased share for funding this very necessary agricultural research initiative.

Thank you for this opportunity to present testimony on this very important issue. If we can address more specific questions or provide added information, please contact:

Robert G. Zimbelman
Executive Vice President
American Society of Animal Science
(301) 571-1875 phone
(301) 571-1858 FAX

MONDAY, MARCH 26, 1990.

BIOTECHNOLOGY PARTNERSHIP

WITNESS

ROGER J. BASSETT, DIRECTOR, GOVERNOR'S OFFICE OF EDUCATIONAL POLICY AND PLANNING, STATE OF OREGON, ON BEHALF OF THE OREGON/MASSACHUSETTS BIOTECHNOLOGY PARTNERSHIP

Mr. TRAXLER. Mr. Roger Bassett, Oregon/Massachusetts Biotechnology Partnership.

Which of those areas are you from?

Mr. BASSETT. I am from Oregon.

We are welcome and willing partners with Massachusetts.

Thank you for the chance to be here, Mr. Chairman.

I am Roger Bassett from the Governor's office in Oregon, where I work on the Oregon Governor's Science Council, and I am representing the Oregon/Massachusetts Biotechnology Partnership.

The commonwealths both have strengths which we are bringing to this partnership.

In Massachusetts, they have already made considerable progress in creating, through the Massachusetts Centers for Excellence Corporation, a critical mass of research institutions and venture capital in small and medium-sized businesses interested in moving the results of research in the biotechnology arena crossed into the private sector.

In Oregon, our strengths are in the labs. We are a natural resource State.

Emphases of our researchers run to fibers and serials and products that reflect that natural resource base.

We have three institutions, public universities plus a private non-profit graduate institute involved.

We propose to combine those strengths, to expand the basic and allied research from Oregon's side of this in plant genetic engineering and bioprocessing so those strengths can be incorporated into the Massachusetts interest in extending what they have been able to accomplish thus far in the medical field across to the natural resource base of their State and the New England area.

We in Oregon need very much the expertise of the State of Massachusetts in staging these lab results out of the labs and into the private sector base.

The results of this will benefit not just the two States, but the two regions as well.

The members of the partnership very much appreciated the help of this committee in getting this thing started last year.

The 250,000 provided for this partnership in fiscal year 1990 has allowed us to formalize this relationship to begin the detailed inventory of what we have in the base and to begin work on a series of conferences as an early stage vehicle for exchanging both the research information and the private sector expertise that makes this bridge work.

We respectfully request your consideration of secondary funding for this partnership in the amount of $5 million, $2.5 million for each of the two States.

Through a combination of institutional State funds and private sector funds, we have committed to match that amount.

The focused research is as I have described it and it is also detailed in the written statement, so I won't proceed further through that except as you have questions.

As we see it, we have immediate payoffs here that we have been able to go through the Governor's office and through the Center for Excellence in Massachusetts, can see plugging into ongoing activities immediately, but long term we would hope to be able to demonstrate a model, two-region partnership in this area of research.

We respectfully request favorable consideration of the committee and we thank you very much for the opportunity to present this.

Mr. TRAXLER. We appreciate that very fine presentation. We will do all that we can.

[Mr. Bassetts' prepared statement follows:]

NEIL GOLDSCHMIDT
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TESTIMONY SUBMITTED TO THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES SUBCOMMITTEE OF THE HOUSE APPROPRIATIONS COMMITTEE

By Roger J. Bassett
Director, Governor's Office of Educational
Policy and Planning

Chairman Whitten and members of the Subcommittee, I am appearing today to provide testimony on behalf of the Oregon/Massachusetts Biotechnology Partnership.

INTRODUCTION

The Commonwealth of Massachusetts and the State of Oregon have laid the foundations for a model interstate partnership in the field of biotechnology. This unique effort will build upon the respective strengths of the two states to enhance the development of the biotechnology industry nationwide. The partnership will focus on two main areas: the application of recombinant DNA technology to plant sciences and the development of strategies to improve the efficiency of small and medium-sized biotechnology companies, especially through shared facilities.

Both Oregon and Massachusetts have research centers with worldwide reputations. Oregon's three research institutions with programs in the plant sciences, Oregon State University, the University of Oregon, and the Oregon Graduate Institute for Science and Technology, recently have joined forces to pursue cooperative efforts in molecular plant engineering and bioprocessing. These programs, combined with Oregon's abundant supply of natural resources and natural resource industries, provide a strong base for the application of biotechnology to agriculture, forestry, and the food industries. To build on this base, Oregon needs to develop regular mechanisms for taking the products of innovation to the marketplace. Massachusetts, through the public/private consortium known as the Massachusetts Biotechnology Research Institute (MBRI), has a highly successful record in this area. The MBRI continues to evolve new strategies for nurturing biotechnology companies at the earliest stages of development.

PROPOSAL

Purpose. In this proposal, the Oregon/Massachusetts Biotechnology Partnership is seeking federal support for the second year of a five-year research and development program.

The overall goals of the program and the partnership are:

- To expand basic and applied research in plant genetic engineering and bioprocessing;
- To enhance the commercial exploitation of innovations in biotechnology; and
- To foster education and training programs to support the development of diverse biotechnology industries.

The expected outcome is a working partnership serving essential research and economic development needs for the Northeast and Northwest regions of the United States and as a model for other multi-regional efforts to respond to the biotechnology initiatives of our major international competitors.

Results of the First Year. Grant funds provided to the Partnership in the first year of the partnership are being used to accomplish the following joint tasks:

- Establish effective working relationships between key organizations and individuals in the two states;
- Complete detailed inventories of biotechnology resources and needs in Oregon and Massachusetts to identify potential areas of collaboration;
- Support faculty research productivity in biotechnology;
- Plan a series of conferences addressing specific topics in biotechnology that will promote the transfer of knowledge and experience from one state to the other; and
- Carry out the first conference in the series, "Opportunities in Plant Molecular Biology: Plant Productivity, Plant Stress, and Biomass Conversion/Biodegradation."
- The Massachusetts portion will help support the development of college-level education and training programs conducted through the MBRI Innovation Center and the implementation of an industry-focused Bioprocessing Resource Center.
- In Oregon, the funds will be used to begin focusing faculty research and educational efforts in basic plant molecular biology and bioconversion on the natural resource development and diversification interests of the Northwest and New England regions of the United States.

Funding for the Second Year. Massachusetts and Oregon have committed a total of $5 million for biotechnology research and development projects to be carried out under the umbrella of the partnership during the second year. Because of the national importance of this effort, the two states are seeking an equal $5 million level of funding from the U.S. Department of Agriculture.

An additional $5 million in federal funding for the partnership (matched by Partnership expenditures) will be sought in each of the next three years.

The partners anticipate that at the end of the fifth year, the partnership will be self-sustaining through a combination of state support, industrial research contracts and peer-reviewed grants and contracts.

Administration. Overall responsibility for governing the partnership rests with an Oregon/Massachusetts Biotechnology Partnership Steering Committee. The Steering Committee will have an equal number of members from each state and will appoint appropriate advisory committees to deal with each of the three partnership goals, thereby ensuring participation of key groups and institutions in both states.

Operational responsibility for activities of the Partnership rests with the staffs of the MCEC and the Oregon Science Council. Direct management of specific projects and tasks will be the responsibility of each partner in a manner consistent with its intergovernmental, industry, and academic relationships and within guidelines associated with agreements between the Cooperative State Research Service and Oregon State University's Agricultural Experiment Station.

Funds for the interstate partnership will be held by Oregon State University's Agricultural Experiment Station. The funds will be distributed by the University to participating institutions in both states as sub-contracts for approved activities. All federal grant reporting requirements will be met by the University.

DESCRIPTION OF ACTIVITIES

Massachusetts. Funding for the Massachusetts component of the interstate partnership will be used primarily for the nonprofit elements of the Massachusetts Bioprocessing Research Institute Innovation Center, including the pilot Bioprocessing Resource Center and the versatile conference and educational facility. These will occupy 12,000 square feet of Biotech III in the Massachusetts Biotechnology Research Park.

The Massachusetts experience indicates that areas with a rapidly growing biotechnology industry--including small and medium-sized companies with limited resources--require some form of shared bioprocessing facility. Such facilities must provide equipment and specialized services in an industry-tailored, proprietary-controlled environment. There also is an enormous

need for personnel trained in biotechnology manufacturing operations. Because of the lack of equipment and facilities at the university level, many graduates entering industry possess theoretical understanding of bioprocessing but lack practical, hands-on experience.

To meet the needs of businesses and universities in Massachusetts and the New England region, MBRI has begun construction of a Bioprocessing Resource Center Pilot Plant. This plant will be designed to support scale-up of microbial fermentation, tissue culture growth, and product separation and purification. Plant operations will be documented in accordance with Good Manufacturing Practice (GMP) guidelines established the U.S. Food and Drug Administration for the production of human therapeutic products.

Anticipated users of the facility include CBI portfolio companies, such as Alpha-Beta Technology Inc., and EcoScience Laboratories, Inc. In the past, these companies have had to use bioprocessing services as far away as Illinois and Texas. Also, five independent biotechnology firms in Massachusetts have expressed interest in a pilot production plant. One of these firms is the developer of a number of proprietary technologies for agricultural applications of genetic engineering, including the genetic modification of rhizobia to increase nitrogen fixation in legume plants (particularly alfalfa and soybeans).

The major items of equipment required for the Bioprocessing Resource Center include microbial fermenters for scale-up of fermentation and production (three units with interchangeable 1.5 and 5-liter flasks, two 15-liter systems, an 80-liter system, and a 500-liter system), tissue culture bioreactors for plant and mammalian cells (three 1.5 liter systems, two 15-liter systems, and a 60-liter airlift bioreactor), and a flexible system for product separation and purification. Planners have suggested that the Bioprocessing Center also should offer the following service units to improve the speed and quality of research: a centralized hybridoma facility; a chemistry consultation center with expertise and equipment to purify, synthesize, and sequence proteins and DNA; a biocomputing center; a cell-sorting facility; a mass spectrometry facility; an NMR facility; and an electron microscopy facility.

Expected funding sources include state funds, industrial research contracts, and peer-reviewed grants and contracts, as well as funds from the federal government.

Oregon. Funding for the Oregon component of the interstate partnership will be invested in the Oregon Plant Biotechnology and Bioprocess Technology Initiative.

Natural resources are the heart of Oregon's economy. Agriculture and forestry contribute over $5 billion annually to Oregon's economy. With population growth pressing the limits of natural resource production areas and with global demand for Oregon products, Oregon must not only diversify its economy, it must find ways to diversify the fibers, fruits, and grains that make up its natural resource base.

Three Oregon research universities have notable strengths in plant biotechnology. Oregon State University has the largest program, focused around the Center for Gene Research and Biotechnology. The Oregon Institute for Science and Technology's concentration is in the area of bioprocessing including biomass conversion.

The University of Oregon's strength lies in the area of plant molecular biology, including plant gene structure and regulation.

The three research institutions will coordinate their efforts on behalf of Oregon's natural resource base with the Governor's Science Council and agriculture/natural resource industry representatives through the Plant Biotechnology and Bioprocess Technology Initiative.

Among the research targets of particular relevance to Oregon's natural resource base are:

- Development of efficient means to directly transfer genes into economically important crops and trees to increase disease resistance; increase herbicide resistance; improve nutritional, medicinal and flavor value; and increase resistance to defoliating insects.

- Development of expertise in general fermentation and applied biochemistry which, together with Oregon's access to the Massachusetts Bioprocessing Resource Center, will create an Oregon capacity for large scale culture of biological products--an essential component to any long-term, high volume biotechnology industry. The products of that industry include drugs, industrial catalysts, pesticides and structural materials.

- Expansion and application of immunological research to develop vaccines for fish, domestic animals, and humans; new diagnostic tests for animals; essential reagents for animal care and for crop plant and tree development.

- Development of new methods for converting agricultural residues and forest wastes into fuel, chemical and food products.

- Development of new applications of microbial degradation to toxic compounds in the soil and groundwater.

CONCLUSION

Oregon and Massachusetts are confident that this proposal reflects opportunities for a productive partnership. The immediate result will be a project of value to each of the partners in enhancing their efforts in the area of biotechnology. In the long term, the partnership will provide a national model for cooperation, sharing of experience, transfer of information, and development of technology networks across state boundaries.

We would appreciate your favorable consideration of our request during Subcommittee deliberations on Fiscal Year 1991 appropriations.

Thank you.

MONDAY, MARCH 26, 1990.

ANIMAL DAMAGE CONTROL

WITNESSES

JOHN W. GRANDY, VICE PRESIDENT FOR WILDLIFE AND THE ENVIRONMENT, THE HUMANE SOCIETY OF THE UNITED STATES, ON BEHALF OF THE MASSACHUSETTS SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS

MARTIN L. STEPHENS, DIRECTOR, LABORATORY ANIMALS DEPARTMENT, THE HUMANE SOCIETY OF THE UNITED STATES, ON BEHALF OF THE HUMANE SOCIETY OF THE UNITED STATES

Mr. TRAXLER. Dr. Martin Stephens and Dr. John Grandy, the Humane Society of the United States.

Gentlemen, we will put your statements in the record.

Welcome. You may proceed to deliver your message.

Dr. GRANDY. Thank you, sir.

Good afternoon.

My name is John Grandy. I am Vice President for Wildlife and the Environment for the Humane Society of the United States.

With me is Dr. Martin Stephens of our staff, our Director of Laboratory Animal Care.

I will divide our time in half.

In addition to being Vice President for Wildlife and Environment of the Humane Society of the United States, I am currently a member of the Secretary of Agriculture's National Animal Damage Control Advisory Committee and was a member of the Animal Damage Control Advisory Committee for the Secretary of the Interior, Cecil Andrus, during the Carter Administration.

I present my statement on behalf of the Massachusetts Society for the Prevention of Cruelty to Animals and the Humane Society of the United States.

MSPCA is the largest animal protection organization in the United States and the world.

I would like to begin by extending the appreciation of our members and constituents to this committee for the subcommittee's past support of non-lethal animal damage control techniques such as livestock guarding dogs and for incorporating these into the operational activities of APHIS.

Our organizations today have two principal concerns regarding animal damage control and APHIS.

One is the division of the budget with respect to research, science and technology research, and the operational budget of the APHIS animal damage control program.

Since the animal damage control program was first initiated, research to identify, develop, and improve methods of controlling wildlife caused agricultural damage, it has focused virtually exclusively on lethal means of control, poisons such as strychnine, compound 1080, and cyanide, traps, and other things.

Despite the millions of dollars of research spent developing these techniques and the millions more directed each year toward their use, there is little evidence that current lethal control techniques are effective in reducing wildlife-caused agricultural damage.

Indeed, the history of destruction of western wildlife demonstrates that most of this destruction is blind waste. It does not help ranchers and it destroys wildlife belonging to all Americans.

In recent years, largely at the insistence of this subcommittee, some progress has been made toward ending the historical reliance on lethal predator control.

However, that progress is unfortunately at least in the research sense, about to be obliterated.

In fiscal year 1989, the division of the budget for research is 98 percent of the budget is going into lethal controls and 2 percent into non-lethal controls.

Moreover, at the January 1990 meeting of the National Animal Damage Control Advisory Committee, the APHIS research people announced that their entire budget, that is to say 100 percent, would go into lethal controls in the current year and perhaps for as long as 1994.

We would like to urge you and members of this subcommittee to ensure that the fiscal year 1991 budget for science and technology branch progress to more than a continuation of the status quo in terms of lethal controls, but work genuinely into non-lethal controls.

We would suggest that given the past history of the program, up to 50 percent of the budget be allocated to non-lethal controls.

Similarly for the Operational Control program, the division for the Western Animal Damage Control program is virtually identical.

Indeed, there is so little money allocated for non-lethal controls that I was asked by a former Director of the Animal Damage Control program at the January 1990 meeting if the Humane Society of the United States could please put $90,000 out of a $18 million budget into non-lethal controls.

I asked the gentleman, "why do you ask the Humane Society of the United States"?

He said, "Well, we simply, despite our $18 million budget, have no money in the budget to fund a $90,000 non-lethal control in spite of the fact that it works."

In short, Mr. Chairman, we would like to suggest that the Operational Control program also have a substantial allocation of money in it for non-lethal controls.

We fear that without specific direction from this subcommittee, we won't have it.

Mr. GRANDY. Dr. Stephens?

Dr. STEPHENS. Thank you.

Mr. Chairman, I am Martin Stephens of the Laboratory Animals Department of the Humane Society of the United States.

I appreciate this opportunity to speak about the budget appropriation for the U.S. Department of Agriculture's Enforcement of the Animal Welfare Act.

I understand that tomorrow you will be hearing from a coalition of animal protection and scientific organizations on allocation of the budget for enforcement of the Animal Welfare Act.

We are part of that coalition and endorse that and I want to underscore the importance that we attach to the need for increased

appropriations for increased inspections of research labs and other facilities.

Today I want to address a specific need focusing on an additional $2 million allocation to help APHIS to comply with a congressional mandate that is no less than 20 years old.

Back in 1970, Congress amended the Animal Welfare Act to expand coverage to species in addition to dogs, cats, and the other species that were then covered so that the Act would include species such as farm animals, mice, birds, rats, and other mammals and birds used in the research process. But that was 20 years ago and to date, the USDA hasn't made that change.

It seems that the main problem is budgetary limitations.

The HSUS and the Animal Defense Fund have filed a petition and we understand that they are sympathetic to our goals, but that they lack appropriate funding.

They are taking certain steps in this direction.

We will implore them to find the money from whatever source, but we are hoping that the Congress can help us out on this issue, and from our conversations with USDA, we estimate that an additional $2 million dollar will be needed to enforce or to extend protections to farm animals, mice, birds and other mammals and birds used in research.

The Animal Welfare Act is the American public's primary means of assurance that what is happening to animals in the lab is humane.

The species that we are seeking protection for comprises no less than 85 percent of the animals used in the lab.

Congress has already spoken on this issue, so we feel the time is long overdue to assure the American public that animals in labs are being treated humanely and we would urge you to make an appropriation for that purpose.

Mr. TRAXLER. We appreciate you coming to testify today. Hopefully we can help out.

Thank you very much.

[The prepared statements of Drs. Grandy and Stephens follow:]

MSPCA
Massachusetts Society for the Prevention of Cruelty to Animals
Founded 1868
Main Office • 350 South Huntington Avenue • Boston, MA 02130 • (617) 522-7400

STATEMENT OF DR. JOHN W. GRANDY

VICE PRESIDENT FOR WILDLIFE AND THE ENVIRONMENT

THE HUMANE SOCIETY OF THE UNITED STATES

ON BEHALF OF

THE MASSACHUSETTS SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS

AND

THE HUMANE SOCIETY OF THE UNITED STATES

HOUSE COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

FY91 BUDGET

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

MARCH 26, 1990

Thank you, Mr. Chairman, for the opportunity to express the views of the Massachusetts Society for the Prevention of Cruelty to Animals and The Humane Society of the United States with respect to the Fiscal Year 1991 Department of Agriculture budget for the Animal and Plant Health Inspection Service. I am John Grandy, member of the Secretary of Agriculture's National Animal Damage Control Advisory Committee and Vice President for Wildlife and the Environment for the Humane Society of the U.S.. I respectfully request that my entire statement be incorporated in the record.

Founded in 1868, the Massachusetts Society for the Prevention of Cruelty to Animals (SPCA) is a broad-based animal advocacy organization of 45,000 members. The Massachusetts SPCA offers programs and services on a local, state, national, and international level.

The Humane Society of the United States (HSUS) is a national, non-profit organization representing more than one million members and constituents. We are dedicated to humane treatment and basic protection from cruelty of wild and domestic animals.

I would like to extend the appreciation of the members of the Massachusetts SPCA and The HSUS for this Subcommittee's past support for non-lethal animal damage control techniques such as livestock guarding dogs and for incorporating these into the operational activities of the Animal and Plant Health Inspection Service's Animal Damage Control Program.

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

SCIENCE AND TECHNOLOGY

The Massachusetts SPCA and The Humane Society of the U.S. strongly recommend that this Subcommittee direct APHIS to allocate a substantial portion of FY91 funds for animal damage control research in Science and Technology to the investigation of potential non-lethal, non-injurious animal damage control methods.

Since the Animal Damage Control Program first initiated research to identify, develop, and improve methods of controlling wildlife-caused agricultural damege, it has focused virtually exclusively on lethal means of control. Poisons such as strychnine, Compound 1080 and cyanide have been studied for decades at great cost to taxpayers. Poison delivery devices, such as the livestock protection collar, single dose bait, and M-

44 have been intensely scrutinized. Furthermore, traps of many designs have been evaluated by ADC Program researchers.

These research efforts have produced a handful of lethal control techniques on which the western Animal Damage Control Program currently spends virtually its entire "control" budget, and by which the research budget is consumed. Despite the millions of dollars spent developing these techniques and the millions more directed each year toward their use, there is little evidence that current lethal control techniques are effective in reducing wildlife-caused agricultural damage. Indeed, the history of destruction of western wildlife demonstrates that most of this destruction is blind waste. It does not help ranchers and it destroys wildlife belonging to all Americans.

In recent years, largely at the insistence of this Subcommittee, some progress has been made toward ending the historical reliance on lethal predator control. Livestock guarding dog research conducted by the Denver Wildlife Research Center and a three-year pilot guarding dog project established by Congress at the recommendation of a number of environmental and animal welfare organizations have shown livestock guarding dogs to be an important means of reducing losses to predators, primarily the coyote. The livestock guarding dog program has evolved from the pilot project initially conducted by Hampshire College's New England Farm Center in Amherst, Massachusetts to become a very important part of the current operational ADC Program.

In addition, research on taste aversion as a means of predation control has been ongoing for several years. And until the end of FY89, researchers at the Denver Wildlife Research Center were looking at a number of promising non-lethal wildlife damage prevention methods. For instance, researchers were examining the sucrose content of varieties of a number of fruits to find those with high sucrose levels. Starlings lack an enzyme important in digesting sucrose; identifying varieties with high levels and recommending their production to growers may reduce crop losses to starlings. Researchers were also investigating chemical repellents aimed at birds, rodents and canines, at electrical means of repelling wildlife from specific areas, and at other potential non-lethal control techniques. Yet in spite of these promising research projects, the emphasis is still skewed overwhelmingly toward lethal research.

For example, at a January, 1990 meeting of the National Animal Damage Control Advisory Committee, the Director of Science and Technology stated that in FY89, 98 percent of animal damage control research funds were spent investigating lethal techniques, while only 2 percent of the research budget was directed toward non-lethal investigations. As small as that

portion is, even the two percent has been reduced to zero in FY90 so that all funding can be devoted to pesticide reregistration under the 1988 amendments to the Federal Insecticide, Fungicide, and Rodenticide Act.

It is clear that, in the absence of Congressional direction, all research funds through at least FY94 are to be spent on pesticide reregistration and registration of new uses of existing pesticides, while promising non-lethal techniques are ignored. At a time when public concern about the health of our environment and impacts of continued pesticide use has never been greater, spending 100% of research funds on pesticide registration and in turn on continued lethal wildlife control is unacceptable to the members of the Massachusetts SPCA, the HSUS, and, I am confident, the public at large.

Mr. Chairman, I urge you and members of this Subcommittee to ensure that, with the FY91 budget for the Science and Technology branch, animal damage control research progresses toward developing non-lethal control methods that not only do not necessitate killing wildlife, but that represent long-term solutions to wildlife damage problems. We strongly recommend that this Subcommittee direct APHIS to allocate a substantial portion of the FY91 animal damage control research budget to research on potential non-lethal, non-injurious wildlife damage control techniques. Indeed, we feel an allocation of 50% toward non-lethal research projects is justified and appropriate. We further recommend that APHIS be directed to prioritize pesticide reregistration so that available research funds are utilized on reregistration of those vertebrate pesticides most important to agriculture.

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANIMAL DAMAGE CONTROL PROGRAM

Similarly, we further recommend that this Subcommittee direct APHIS to place greater emphasis on recommendation and use of existing non-lethal control methods in the operational control activities of the Animal Damage Control Program. While livestock guarding dogs are now a part of the ADC Program's operational coyote control activities, conducted largely in the West, their role is minor relative to lethal control including aerial hunting, trapping, poisoning, and denning. And there are new non-lethal devices that are not in use because money is instead spent killing wildlife. For instance, I was recently approached by a former director of the ADC Program who asked whether The HSUS could provide $90,000 to the ADC Program to begin use of a siren/strobe device that is known to deter predators. With an annual operational program budget of approximately $13.5 million for the western region, it is absurd that $90,000 cannot be found to support use of such an admittedly workable technique.

In addition, we feel strongly that the ADC Program could more aggressively recommend to livestock producers appropriate changes in husbandry practices, such as electric fencing, night penning, shed lambing, pasture rotation, and carcass removal that can reduce predation losses without killing the predators.

We recommend, therefore, that the Subcommittee direct APHIS to allocate a substantial portion of the FY91 western operational program budget to integration and use of existing non-lethal controls. Frankly, Mr. Chairman, we believe that an allocation of 50% of operational funds to use of non-lethal controls is appropriate, given the fact that decades of lethal control has done little to help the livestock industry.

Thank you very much for the opportunity to have presented the views of the Massachusetts SPCA and The HSUS with respect to these important issues. I would be happy to answer any questions you may have.

TESTIMONY OF DR. MARTIN L. STEPHENS
Presented to the Subcommittee on Agriculture, Rural Development, and Related Agencies of the House Committee on Appropriations
March 26, 1990

Mr. Chairman, I am Dr. Martin Stephens, director of the laboratory animals department of The Humane Society of the United States (HSUS), the nation's largest animal protection organization. On behalf of more than one million members and constituents of The HSUS, I appreciate this opportunity to testify on FY 1991 appropriations for the U.S. Department of Agriculture to enforce the Animal Welfare Act (AWA).

The HSUS has joined other animal-protection and scientific organizations in urging this Subcommittee to appropriate $12 million to the USDA's Animal and Plant Health Inspection Service (APHIS) for enforcement of the AWA. We believe this $3.3 million increase over the President's FY 1991 budget plan would enable APHIS to better inspect the more than 9,000 registered research sites, animal dealers, exhibitors, and intermediate handlers and carriers covered by the AWA. Tomorrow, the Subcommittee will be hearing from these animal-protection and scientific organizations, represented by the Society for Animal Protective Legislation. I wanted to underscore the importance that The HSUS attaches to this appropriation before turning to my main topic.

The primary purpose of my testimony today is to seek an additional $2 million appropriation to help APHIS comply with a congressional mandate that is now twenty years old. In 1970, Congress amended the AWA to expand coverage from dogs, cats, primates, guinea pigs, hamsters, and rabbits to include all mammals and birds used in experimentation and other regulated activities. The USDA has yet to implement this change. They have said that budgetary limitations have prevented them from carrying our this congressional mandate.

On November 15, 1989, The HSUS and the Animal Legal Defense Fund filed a petition with the USDA, requesting the agency to comply with the law. The petition, a copy of which I am submitting for the record, focused on two sets of species: (1) birds and laboratory-bred mice and rats, species which have been specifically excluded from the USDA's own definition of "animal," and (2) horses and other farm animals, which have not been specifically excluded from USDA's definition of "animal" when used in regulated activities, but for which the USDA has nevertheless not issued humane standards and regulations.

APHIS officials have indicated to us that they are supportive of the requested change, at least with respect to farm animals, rats, and mice. Indeed, we understand that APHIS will shortly publish a notice of intent to institute regulations on farm animals used in biomedical research and other covered activities. Nevertheless, our understanding from communications

with APHIS is that funding is the main obstacle to extending coverage to mice and rats, and perhaps birds as well. We are prepared to press the USDA to reallocate funds from outside its budget for AWA enforcement, if necessary to make the requested change. However, Congress may wish to make a special appropriation to help ensure that its twenty year old charge to the USDA is finally fulfilled.

In November, 1989, APHIS estimated that extending coverage to mice and rats would cost an additional $1.9 million in inspection expenses. Adding birds to the list would bring the total to about $2 million, the added appropriation we are requesting.

The Animal Welfare Act is the American public's primary means of assurance that animals in laboratories receive at least limited protection. Yet some 85% of the mammals and birds currently used in biomedical experimentation remain disenfranchised from the protections of that Act. From our conversations with officials at the USDA and the Public Health Service, as well as with other representatives of the research community, there appears to be widespread support for removing the arbitrary exclusion of birds, mice, rats, and farm animals from the protections of the Act. By appropriating funds specifically designated for this purpose, the Subcommittee can help facilitate this long overdue reform.

BEFORE THE U.S. DEPARTMENT OF AGRICULTURE

PETITION FOR RULEMAKING

AND COLLATERAL RELIEF

The Humane Society of the United States

2100 L Street, N.W.
Washington, D.C. 20037

The Animal Legal Defense Fund

1363 Lincoln Avenue
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BEFORE THE U.S. DEPARTMENT OF AGRICULTURE

PETITION FOR RULEMAKING

AND COLLATERAL RELIEF

I. INTRODUCTION

Pursuant to the Administrative Procedure Act, 5 U.S.C. § 553(e), The Humane Society of the United States and the Animal Legal Defense Fund, two national animal protection organizations, petition the Department of Agriculture to 1) institute rulemaking to specify that birds, and rats and mice bred for use in research, are species included in the definition of "animal" under the Animal Welfare Act, 7 U.S.C. § 2131 et seq., and applicable regulations, 7 C.F.R. 1.28, and 2) promulgate standards for the care of these species, as well as for horses and other farm animals used or intended for use in regulated activities.

II. NATURE OF PETITIONERS' INTERESTS

Petitioner, The Humane Society of the United States (The HSUS), is a non-profit, charitable corporation with principal offices in Washington, D.C., and regional offices throughout the United States. The HSUS represents a membership and mailing constituency of more than 1,000,000 persons nationwide. The

primary goal of The HSUS is to promote humane care and treatment of all animals, including the at least 17-22 million animals used each year in American laboratories for experimentation, research, and testing.[1]

Petitoner HSUS played a major role in passage of the original Laboratory Animal Welfare Act of 1966 (Pub. L. 89-544; 80 Stat. 350), and in passage of amendments in 1970 (Pub. L. 91-579; 84 Stat. 1560) (renamed the "Animal Welfare Act"), in 1976 (Pub.L. 94-279; 90 Stat. 417) and in 1985 (Pub.L. 99-198, Title 17 XVII, Subtitle F (secs 1751-1759), Dec. 23, 1985; 99 Stat. 1650). Since 1966, The HSUS has actively participated in the promulgation of regulations intended to implement the Act (9 C.F.R. 1-4) and has devoted large amounts of its budget and staff time to assisting and evaluating enforcement of this law.

Petitoner, the Animal Legal Defense Fund (ALDF), is a national non-profit charitable corporation of attorneys, law professors, law students and paralegals. ALDF has chapter offices in San Francisco, New York, Boston, Washington, D.C., Chicago, and Seattle. The organization's staff attorneys, the 13 board members, and chapter directors have concentrated on animal law for many years, with emphasis on four spheres of animal use: laboratory animals, wildlife, farm animals, and companion animals.

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[1] U.S. Congress, Office of Technology Assessment, Alternatives to Animal Use In Research, Testing, and Education (Washington, D.C., U.S. Government Printing Office, OTA-BA-273, February 1986).

ALDF's purposes and activities include initiating and participating in federal and state legal actions and administrative rulemaking proceedings concerning the care and use of all animals, including farm, research and wild animals, and providing information and legal opinions to its members when there has been a violation of any rule or policy, or other acts, omissions, or neglect by federal and/or state governments or private individuals which cause or permits physical pain, behavioral distress, suffering, debilitation and/or death to animals. ALDF works to ensure that important governmental decisions affecting the lives and interests of animals are based on a rational analysis and made according to applicable law.

The Animal Legal Defense Fund has submitted extensive comments to USDA in response to USDA's proposed rulemakings under the Animal Welfare Act, 7 U.S.C. § 2131 et seq. In addition, since 1986, ALDF has devoted a large portion of its budget and staff time to evaluating USDA's administration of the Animal Welfare Act and the promulgation of regulations under the Improved Standards for Laboratory Animals Act, 7 U.S.C. § 2131, et seq.

III. STATEMENT OF THE PROBLEM

CURRENT REGULATIONS AND GUIDELINES EXCLUDE "BIRDS, AND RATS OF THE GENUS RATTUS AND MICE OF THE GENUS MUS BRED FOR USE IN RESEARCH," FROM THE DEFINITION OF "ANIMAL" AND, THEREFORE, NO STANDARDS EXIST FOR THE PROTECTION OF THESE SPECIES UNDER THE ANIMAL WELFARE ACT. FURTHERMORE, ALTHOUGH HORSES AND OTHER FARM ANIMALS BEING USED OR INTENDED FOR USE IN BIOMEDICAL RESEARCH ARE NOT EXCLUDED FROM THE DEFINITION OF "ANIMAL", USDA HAS FAILED TO PROMULGATE STANDARDS FOR THESE SPECIES UNDER THE ACT.

The Animal Welfare Act is the only federal statute designed to protect animals used in all research facilities. Under this law, research facilities are required to register with the U.S. Department of Agriculture (USDA) and to meet minimum standards of housing, care, and treatment for warm-blooded animals. The Act is administered by the Animal and Plant Health Inspection Service (APHIS), an agency of the USDA.

The Animal Welfare Act established by law:

> the humane ethic that animals should be accorded the basic creature comforts of adequate housing, ample food and water, reasonable handling, decent sanitation, sufficient ventilation, shelter from extreme weather and temperature, and adequate veterinary care, including the appropriate use of pain-killing drugs.[2]

The Animal Welfare Act defines "animal" as follows:

> any live or dead dog, cat, monkey (non-human primate mammal), guinea pig, hamster, rabbit, or such other warm-blooded animal, as the Secretary may determine is being used, or is intended for use, for research, testing, experimentation, or exhibition purposes or as a pet; but such term excludes horses not used for research purposes and other farm animals, such as, but not limited to livestock or poultry, used as food or fiber, or livestock or poultry, used or intended for improving animal nutrition, breeding, management, or production efficiency, or for improving the quality of food or fiber. With respect to a dog, the term means all dogs, including those used for hunting, security, or breeding purposes.

7 U.S.C. § 2132(g) (emphasis added).

Despite the Act's definition of "animal," the Secretary of Agriculture has promulgated regulations that exclude "birds, rats of the genus Rattus and mice from the genus Mus bred for use in

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[2] H.R. Rep. No. 91-1651, 91st Con., reprinted in (1970) U.S. Code, Cong. & Ad News 5103, 5104.

research," from the definition of "animal." 9 C.F.R., Part 1. While the Act does provide for exclusions to the definition of "animal," birds and rats and mice bred for research are not the animals that Congress dictated that USDA should exclude.[3] Therefore, by excluding "birds, rats of the genus Rattus and mice of the genus Mus bred for use in research" by regulation, USDA violates the Act's definition of "animal."

Because birds and rats and mice bred for research are excluded from the Act's definition of "animal," the USDA has not promulgated standards for the protection of these species under the Act. The USDA also has not promulgated Animal Welfare Act standards for the protection of horses and other farm animals used for biomedical research, despite the fact that these animals are not excluded from the definition of "animal" in the Act itself nor the USDA's regulations.

The Act's definition of "animal" does provide for certain exclusions of horses and other farm animals. These exclusions are "horses not used for research purposes and other farm animals, such as, but not limited to livestock, poultry, used as food or fiber, or livestock or poultry, used or intended for improving animal nutrition, breeding, management, or production efficiency, or for

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[3] The exclusions allowed by the Animal Welfare Act are: horses not used for research purposes and other farm animals, such as, but not limited to livestock or poultry, used or intended for use as food or fiber, or livestock or poultry used or intended for improving animal nutrition, breeding, or management or production efficiency, or for improving the quality of food or fiber.

improving the quality of food or fiber. Therefore, when horses and other farm animals are used for biomedical research, testing or experimentation, they are included in the Acts's definition of "animal" and therefore should be protected by the Act.

The Secretary's exclusion of horses and other farm animals, as well as birds and rats and mice bred for research, from the protection of the Act removes from the Act's protection some 85% of all warm-blooded animals used in research.[4] These exclusions, therefore, vitiate the purpose and intent of the Act to provide humane care for all warm-blooded animals being used "for research, testing, experimentation, or as a pet."

IV. PETITIONERS' REQUEST FOR RULEMAKING

Petitioners request that USDA promulgate regulations that would change the definition of "animal" to that contained in the statute. Accordingly, petitioners request that the regulations read,

> The term "animal" means any live or dead dog, cat, monkey (nonhuman primate mammal), guinea pig, hamster, rabbit, or such other warm-blooded animal, as the Secretary may determine is being used, or is intended for use, for research, testing, experimentation, or exhibition purposes or as a pet; but such term excludes horses not used for research purposes and other farm animals, such as but not limited to livestock or poultry, used or intended for use as food or fiber, or livestock or poultry used or intended for improving animal nutrition, breeding, management or production efficiency, or for improving the quality of food or fiber. With respect to a dog the term means all dogs including those used for hunting, security, or breeding purposes.

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[4] U.S. Congress, Office of Technology Assessment, op. cit.

Secondly, petitioners request that USDA promulgate regulations and standards for humane care of all species of animals that would, as a result of rulemaking, now be included in the definition of "animal."

V. THE REGULATORY CHANGE SOUGHT IS SUPPORTED BY THE CLEAR LANGUAGE OF THE STATUTE

In order to be valid, regulations must be consistent with the statute under which they are promulgated. United States v. Larionoff, 431 U.S. 864, 873 (1971). The starting point for interpreting a statute is the language of the statute itself and, absent a clearly expressed legislative intent to the contrary, that language must ordinarily be regarded as conclusive. Consumer Product Safety Commn. v. GTE Sylvania, Inc., 447 U.S. 102 (1980). When a court is called upon to construe a statute, its task is to interpret the words of the statute in light of purposes Congress sought to serve. Dickenson v. New Banner Institute, Inc., 460 U.S. 103 (1983).

Furthermore, the D.C. Circuit has held that a "court's duty is to favor interpretation which would render statutory design effective in terms of policies behind its enactment and to avoid interpretation which would make such policies more difficult of fulfillment." Motor and Equipment Manufacturers Ass'n., Inc. v. E.P.A., 627 F.2d 1095, (D.C. Cir. 1979) cert. den., General Motors Corp. v. Costle, 446 U.S. 952 (1980).

The clear language of the Animal Welfare Act mandates coverage of warm-blooded animals used, or intended for use, for research, testing, experimentation or exhibition purposes and the promulgation of regulations to govern their humane handling and care.

The Secretary has been charged with the mandatory duty of promulgating "standards to govern the humane handling, care, treatment, and transportation of animals by dealers, research facilities, and exhibitors." The term "animal," as used in the Animal Welfare Act, is defined, by example, as a "dog, cat, monkey (nonhuman primate mammal), guinea pig, hamster and rabbit." That these species of animals are not the only ones to be covered by the Act is clear by the Act's additional language, "..., or such other warm-blooded animal, as the Secretary may determine is being used, or is intended for use, for research, testing, experimentation, or exhibition purposes." By the clear language of the statute, if an animal is warm-blooded and the Secretary determines that the animal is being used, or is intended for use, for research, testing, experimentation or exhibition purposes, the Secretary is required to promulgate standards to govern humane handling, care, treatment and transportation by dealers, research facilities and exhibitors.

The Act specifies that the only discretion left to the Secretary is to determine whether such warm-blooded animals are being used for research. The Animal Welfare Act allows the Secretary no discretion to exclude a warm-blooded animal that is being used or intended for research from coverage of the Act.

In the narrative accompanying proposed rules for 9 C.F.R. Parts 1, 2, and 3 (54 Fed. Reg. 10822-10954) USDA admits to its lack of authority to exclude any warm-blooded research animals from the regulations. In response to comments requesting the exclusion of gerbils, the USDA responded:

> Gerbils became a regulated species when the 1970 amendments to the Act expanded the definition of "animal" to include "such other warm-blooded animal, as the Secretary may determine is being used, or is intended for use for research, testing, ... We do not have the authority to remove these animals from the coverage of the regulations. (emphasis added) (p. 10824)

In the same narrative, in response to comments requesting the inclusion of rats, mice, and birds, USDA stated: "We do have the authority to regulate these animals, though except for wild rats and mice, we have never covered them in our regulations" (p. 10823). By USDA's admission, the Act requires the coverage of gerbils. So does it require the coverage of birds, rats and mice bred for research, and horses and other farm animals used in biomedical research. The issue is not USDA's authority to cover birds, rats, and mice, and horses and other farm animals, but the agency's lack of authority to exclude these warm-blooded animals from coverage.

In the preamble accompanying final rules for 9 C.F.R. Part 1 (54 Fed. Reg. 36113), USDA states that it has the authority to regulate laboratory-bred rats and mice and farm animals used for biomedical research and testing, and that the agency is considering doing so. Petitioners laud the agency for its attention to these matters but we argue that such coverage for rats, mice, and farm

animals is statutorily mandated, not a matter of USDA discretion. Furthermore, such coverage should also be extended to birds, for the same reason.

VI. THE REGULATORY CHANGE SOUGHT IS SUPPORTED BY THE LEGISLATIVE HISTORY OF THE ACT

The Secretary's decision to exclude laboratory-bred rats and mice from the definition of "animal" and from coverage of the Act may have been justified before 1970, but since the 1970 amendments to the Act, there is no such justification.

When the Animal Welfare Act was first passed in 1966, it defined "animal" as "live dog, cat, monkey (nonhuman primate mammal), guinea pig, hamster and rabbit." 80 Stat. 350, 351 (1966). In 1970, however, when the statute was amended, the phrase, "or such other warm-blooded animal, as the Secretary may determine is being used, or is intended for use, for research testing, experimentation or exhibition purposes..." was added. This language has remained through additional amendments of the Act in 1976 and 1985.

The House Committee on Agriculture report which accompanied the 1970 amendments explained that one of the purposes of the bill was to expand the term "animal" to include more species. "[T]his bill includes within its definition all warm-blooded animals designated by the Secretary with only limited and specifically defined exceptions." HOUSE COMM. ON AGRICULTURE, H.R. REP. No. 1651, 91st Cong., 2d Sess. 6, reprinted in 1970 U.S. CONG. & ADMIN.

NEWS 5103, 5104. That USDA understood that its responsibilities would be extended under the Act is clear from the following passages of then Under Secretary of Agriculture J. Phil Campbell's June 9, 1970 letter to the Hon. W.R. Poage, Chairman, Committee on Agriculture, House of Representatives:

> The bill would amend Public Law 89-544, known as the Laboratory Animal Welfare Act, to extend the authority and responsibilities of this Department for regulating the transportation, purchase, sale, housing, care, handling, and treatment of any warm-blooded animal...
>
> The bill would greatly expand program operations under Public Law 89-544 by (1) including all warm-blooded animals under the Act;...
>
> If Federal regulation of laboratory animals is extended to all warm-blooded animals, we suggest it would be appropriate and consistent to extend the species of animals presently regulated under Public Law 89-544, to include all warm-blooded animals.

The Supreme Court has recognized that when "statements of individual legislators...are consistent with the statutory language and legislative history they provide evidence of Congress' intent." Brock v. Pierce County, 476 U.S. 253, 106 S.Ct. 1834 (1986).

That Congress intended the 1970 Amendments to broaden coverage of animals and specifically delineate which animals would be exempted is demonstrated by the comments of legislators during the House and Senate floor discussions:

> Rep. Thomas Foley (D - Washington), speaking on behalf of the House Agriculture Committee, remarked that "[t]his bill, within its definition includes all warm-blooded animals designated by the Secretary, with certain specific limitations and defined exceptions." 116 Cong. Rec. H40154 (Dec. 7, 1970) (emphasis added).
>
> As discussions on the floor of the House progressed, Rep. Catherine May (R - Washington), in urging her colleagues to approve the legislation, described the

bill: "First, it expands the definition of the term 'animal' to include more species. The present law applies only to live dogs, cats, rabbits, hamsters, guinea pigs, and monkeys. All warm-blooded animals designated by the Secretary of Agriculture, with limited exceptions, would be included." 116 Cong. Rec. H40156 (Dec. 7, 1970) (emphasis added).

Rep. Wiley Mayne (R - Iowa) agreed that the bill "expands the definition of covered animals to include all warm-blooded animals designated by the Secretary, rather than just live dogs, cats, rabbits, hamsters, guinea pigs, and monkeys." 116 Cong. Rec. H40158 (Dec. 7, 1970) (emphasis added).

Rep. Wilmer Mizell's (R - North Carolina) remarks included the statement that: "[t]his bill includes provisions regulating the transportation, purchase, sale, housing, care, handling and treatment of warm-blooded animals used in research...[m]ore species of animals will be protected: all warm-blooded animals designated by the Secretary of Agriculture, with but a few specific exceptions." 116 Cong. Rec. H40159 (Dec. 7, 1970) (emphasis added).

Rep. Robert Price (R - Texas) explained that the bill "extends the definition to include all warm-blooded animals designated by the Secretary of Agriculture, with certain specific limitations and defined exceptions." 116 Cong. Rec. H40159 (Dec. 7, 1970) (emphasis added).

VII. THE REGULATORY CHANGE SOUGHT WOULD FURTHER THE PURPOSE OF THE ACT

The General Accounting Office's report on the Department of Agriculture's Animal Welfare Program notes the discrepancy between the Act and the USDA regulations. With respect to the Act, the GAO writes:

> Provisions of the act apply to live or dead animals used or intended for use in research, testing, experiments, exhibition, or as a pet. The act applies to all dogs, including those used for hunting, security, and breeding purposes. The act excludes some animals such as horses not used for research purposes and other farm animals used or intended for use as food or fiber. (GAO-RCED-85-8, p.1)

In a footnote to this passage, GAO points out the discrepancy in the regulations: "USDA regulations (9.C.F.R. 1.1 (n)) also excludes birds, rats, and mice." (p.1)

The Congressional Research Service (CRS), Library of Congress, in "Two Questions Concerning the Animal Welfare Act" (Aug. 7, 1985) comments on the discrepancy more explicitly. The CRS report, in referring to the Secretry of Agriculture, concludes:

> Thus, the Secretary's exclusion of rats and mice in its regulation appears to be inconsistent with the language of the 1970 amendment to the Animal Welfare Act and with Congress's intent in enacting it. (p.4)

The Office of Technology Assessment, in Alternatives to Animals Used in Research, Testing, and Education states:

> the exclusion of rats and mice from the definition of 'animal' appears to frustrate the policy Congress sought to implement in 1970 and consequently to be beyond the Secretary's statutory authority. (p. 278).

These three objective, independent government agencies have found the exclusion of warm-blooded animals being used, or intended for use, for research, testing, experimentation, exhibition purposes or as a pet from the USDA regulations to be outside the Secretary's statutory authority under the Animal Welfare Act, a finding supported by the legislative history of the Act.

VIII. CONCLUSION

For the reasons set forth, Petitioners request that the USDA make the requested changes in its rules and administrative guidelines.

Respectfully submitted,

Martin L. Stephens, Ph.D.
Director/Laboratory Animals
The Humane Society of
the United States

Valerie J. Stanley, Esquire
The Animal Legal Defense Fund

MONDAY, MARCH 26, 1990.

DRYLAND AND IRRIGATED AGRICULTURE

WITNESS

LARRY TVEIT, STATE SENATOR, FAIRVIEW, MT

Mr. TRAXLER. Larry Tveit, Sidney Research Center.

We will put your entire statement in the record and you may proceed.

You are representing the Conservation Districts of Sheridan, Roosevelt and Richland Counties, Montana, and the farmers of eastern Montana and western North Dakota.

That is quite a mixture. Pretty good growers out there; ranchers.

Mr. TVEIT. Thank you, Mr. Chairman and members of the committee for allowing me to testify today.

For the record, I am State Senator Larry Tveit, a farmer-rancher from Fairview, Montana.

I am very much involved environmentally on my ranch and with the farmers and ranchers throughout Montana and North Dakota.

I have condensed remarks from the prepared statement that you have before you.

The Northern Plains Soil and Water Research Center in Sidney, one of four centers through the Great Plains, lies in a semi-arid region of eastern Montana, serving western North Dakota, South Dakota and Wyoming, and consisting of 70 million acres.

It also lies in the middle of high protein spring wheat area. As the new farm bill is emphasizing environmental and food safety, more research should be done on food safety, groundwater quality, safe and prudent use of herbicides, and insecticides and less use of chemicals with more biological control of weeds.

Of great concern is the impact that chemical use, including fertilizer, has on farming operations.

Fate of chemicals in the soil, their movement, breakdown and possible carryover is of great interest.

Of concern is how we can make more efficient use of chemicals.

Needs have been expressed for defining safe levels of use and for proper and timely applications of chemicals.

One proposed objective of research at the Northern Plains Soil and Water Research Center is to determine efficient, environmentally safe, and economic use of chemicals for sustainable agriculture.

The concern over chemicals relates to a second concern of water quality. The concern for water quality ranges from surface or near surface water discharges on drylands and irrigated lands as well as groundwater pollution, causing loss of productive lands and potential pollutant discharges into the Yellowstone and Missouri River system.

The concern over potential pollutants include the problem of erosion—both wind and water—on dry and irrigated lands. This type of research would be beneficial to many areas across the Nation.

A second proposed objective of research is to determine surface and subsurface water movement and potential pollutants carried in the water.

Determine ways and device preventative measures to reduce potential pollutants by focusing on their sources, and develop means to increase efficiency and economical use of chemicals and irrigation waters.

The sustainability of agriculture—both environmental and economical—or the judicious use of soil and water resources is of concern not only in relation to chemical use and water quality, but also in broadening the base of crop production on the Northern Plains.

A desire expressed is to improve crop production/systems and/or develop new ones including the introduction of crops to the area.

Annual legumes in crop rotation studies should be included to test their potential value in providing nitrogen, improve organic matter, tilth, and ground cover to control erosion and surface water runoff.

One goal deemed to be achievable is to reduce the fallow acreage from an approximately 50 percent of the cropped acreage to approximately 30 percent and in wetter years nearly to no fallow.

Potential economic benefit to farmers is about $150 million annually in the Northern Great Plains. Flexibility in choice of alternative and intensive cropping will definitely help erosion control.

Another proposed objective is to determine optimum tillage, cropping system, and land use practices and to include in these practices alternate crops suitable for the semi-arid Northern Plains.

This is to be done in the context of maintaining and/or improving the natural resources, supply high-quality food to the public and provide an acceptable economic return for the farm population.

With introduction of new cropping systems and crops to the area, the concern is that new weed problems may be introduced to compound existing weed control problems, including the control of noxious weeds.

Therefore, another objective suggested is to determine crop/weed associations, competition for water, nutrients, and light and to determine when and how best to control weeds including prudent use of herbicides.

The research should be complimentary to biological weed control efforts which need to be strengthened, thus reducing reliance on chemicals.

Both Federal forestlands and Bureau of Land Management land are heavily infested with noxious weeds in many of the Northern tier States.

This research on these key areas must be programmed in as soon as possible for the benefit of both consumers and farmers. The desire of the American farmer is to maintain a safe, adequate and affordable food supply, while at the same time safeguard the environment.

It is also necessary to maintain and/or improve where needed, an economically sustainable and viable agricultural sector of society.

The agricultural sector, us farmers, must also be able to compete effectively in world markets.

Research such as I mentioned should be done before strong regimental laws and rules could drastically reduce reasonably-priced

high-quality food supplies to the American public and poor economical returns to American agriculture.

I believe the proposed $750,000 additional grant is most essential as one of the research projects to obtain the data necessary to achieve these goals.

Thank you, Mr. Chairman.

Mr. TRAXLER. What are your crops there?

Mr. TVEIT. Mainly, wheat, barley, safflower in the irrigated valley in which the Research Center lays. There are sugar beets and alfalfas, so some of the projects would be on irrigation and contamination, nitrates in irrigation water.

Mr. TRAXLER. Yours is an excellent proposal.

Currently we have allocated about $435,000, somewhere in that area.

Mr. TVEIT. Yes, that is to the station at the present time and we are asking for——

Mr. TRAXLER. There would be about 10 personnel with that? With the old program?

Mr. TVEIT. No, I don't believe there is quite that many there. This is an additional 750 for the increased research in the areas that I have mentioned.

Mr. TRAXLER. You have made a good case for it. You are familiar with, now we have got to go hunt and find the money.

Mr. TVEIT. I am very familiar, sir.

Mr. TRAXLER. We share the same problems.

Welcome to Washington.

That concludes today's public witness hearing.

[The prepared statement follows:]

03/19/90

Statement of Don Steinbeisser, Pete Purvis and Larry Tveit,
representing the Conservation Districts of
Sheridan, Roosevelt and Richland Counties, Montana,
and farmers of eastern Montana and western North Dakota,
before the House Subcommittee on Rural Development,
Agriculture and Related Agencies.

SUMMARY

Additional funding for the USDA – Agricultural Research Service Laboratory at Sidney, Montana is requested to carry out a comprehensive dryland and irrigated land research program to improve the economic viability of agriculture in the semi-arid northern Great Plains. Goals are to develop more profitable and environmentally acceptable cropping systems for dryland and irrigated agriculture. Crop production efficiency must be improved, costs reduced. Emphases will be on reducing summer fallow acreage, on food safety, on ground water quality, on safe and prudent use of herbicides and on biological control of weeds. Benefits include less erosion, potential $150 million annually economic benefit to farmers from reduced use of summer fallow, more efficient use of both rain and irrigation water, reduce or eliminate potential pollutants into the Yellowstone–Missouri river system, and reduced reliance on chemical weed control. Funding request is $750,000 annually.

28-669 O—90——9

A COMPREHENSIVE DRYLAND AND IRRIGATED LAND RESEARCH PROGRAM TO IMPROVE THE ECONOMIC VIABILITY OF AGRICULTURE IN THE SEMI-ARID NORTHERN GREAT PLAINS

Development of more profitable and environmentally acceptable cropping systems for dryland and irrigated farms is necessary to prevent further erosion of economic viability of agriculture.

A diversity of pressures impact agriculture on the northern Great Plains. There is an urgent national need for technology to improve our competitiveness and regain lost export markets. For the farmer and rancher this means that production efficiency must be improved, alternate crops found, and costs reduced. At the same time there is a need for greater research efforts on food safety, ground water quality, and safe use of herbicides, and on biological control of weeds. Sustainable agriculture and Best Management Practices become major points of interest.

Problems

- Sustainability of agriculture – or Best Management Practices of soil and water resources and the broadening of the agricultural base on the semi-arid northern Great Plains.
- Improve conservation cropping systems and/or develop new ones, while protecting or improving the productive capacity of soils.
- Impact of herbicides and fertilizer use on farming practices.
- Fate of chemicals in the soil, their movement, longevity and degradation.
- Definition of safe, proper and timely applications of herbicides, pesticides, and fertilizers, and the influence of said additives and conservation cropping practices on soil properties including the effects of soil microorganisms as related to crop production.
- Water quality as it relates to surface or near surface water discharges on drylands and irrigated lands as well as to ground water pollution. Pollutants have the potential to discharge into the Yellowstone and Missouri river system. Pollutants include those caused by wind and water erosion.

An interdisciplinary approach will be used to research the above defined problems as distilled into the following:

Objectives

- Develop best management practices for conservation cropping

systems that minimize use of summer fallow, reduce erosion, assure sustainability and that are environmentally sound.
- Develop efficient, profitable, environmentally safe, and ecologically sound methods of weed and pest control.
- Develop management systems for dry and irrigated lands that will reduce movement of agricultural chemicals into ground water.

Potential Benefits

- Maintain or improve soil resources by reducing erosion.
- Potential annual economic benefit to farmers, by reducing summer fallow, of about $150 million in semi-arid northern Great Plains.
- Improve water use efficiency on dry and irrigated lands.
- Less dependence on chemicals for pest control.
- Successful biological control of leafy spurge will eventually nearly eliminate dependence on chemicals for its control, and will reduce the annual estimated loss in expenditures and productivity caused by leafy spurge from $30 to $40 million in the U.S. to virtually zero.
- Reduction or near elimination of pollutants entering the Yellowstone-Missouri river system.
- Increased fertilizer use efficiency.
- More efficient use of soil and land resources.

Location

The USDA - Agricultural Research Service, Northern Great Plains Soil and Water Research Laboratory at Sidney, Montana. Strategically located in semi-arid northern Great Plains. Research will be linked to the Montana Agricultural Experiment Station, Eastern Agricultural Research Center at Sidney and the adjacent North Dakota State University Williston Research Center, Williston, North Dakota.

Systems research on dry and irrigated lands will involve the coordinated efforts of soil scientists, agronomists, chemists and weed scientists. New systems will be field tested under practical conditions with cooperating farmers in Eastern Montana and Western North Dakota.

Funding Request

$750,000 in additional annual funding is required.

TUESDAY, MARCH 27, 1990.

SUSTAINABLE AGRICULTURE

WITNESSES

PEGGY MILLER, CONSUMER FEDERATION OF AMERICA
FERD HOEFNER, SUSTAINABLE AGRICULTURE COALITION

Mrs. SMITH [acting Chair]. We will open our hearing now.

We are delighted to have our witnesses here. I believe Peggy Miller from the Consumer Federation is on.

Peggy, let's hear from you. Tell us who you have with you.

Ms. MILLER. I am Peggy Miller with CFA. With me is Ferd Hoefner, representing the Sustainable Agriculture Coalition. He is accompanying me because they are working with us on the issue we are summarizing today and he will help field any questions you may have.

Mrs. SMITH. Fine. You may proceed as you wish.

Ms. MILLER. Thank you.

We are here today. Consumer Federation of America, CFA, is an umbrella organization. It represents, on the national, State, and local level, approximately 240 organizations who, in turn, represent approximately 50 million Americans.

This is sort of a new position for us. In the past, CFA has been very involved in food safety, but we have tackled it predominantly from questions of trying to work on specific pesticides and issues of that nature. What is new is that CFA, because of its growing membership concern about the overall questions of food safety, water quality—and even water supply—animal health, worker health, you name it. Because our members span the whole country, these issues have become of more concern, and that is an understatement. We have been pushed very hard.

In looking at the overall problem, what we decided was to try to refocus our efforts in support of a new farming system rather than try to tackle one pesticide at a time, as we had in the past.

In working with farmers and listening to farmers and talking with researchers and extension agents, CFA came to the position of—really, what we needed to support was a shift in our agricultural system.

We are here today because we are also talking with authorization committees and trying to work from a Farm Bill context. But our reason for coming here today is to basically say that in our impression—and there have been a number of our members and people we work with that have had a long history on this, and I personally have worked on past Farm Bills and can contribute some history in this question—is that there are a number of problems.

From a committee standpoint, because you have such an input and are such a substantive part of the process the really directs the research, the extension, and the marketing of our entire agricultural system, because of that and because of your position, we are asking you to consider what we hear are some of the problems.

First, overall goal: the goals of the agricultural system, in our opinion, are very undefined. In the past, yield production was the primary goal, and that was fine. But what has brought us here today, as we all know, now we are facing the problems of that heavy emphasis. We are now facing water quality and the food safety concerns, etc.

What is being told to us by scientists and by extension agents throughout the sector—this isn't just one university or two. It is very much an agreement, even with people here within the USDA. The overall goal needs to be clarified for them. They would have no problem if we could help clarify a goal.

From our standpoint, what we feel that goal should be is an overall goal that redirects our agricultural system and supports an umbrella within the context of sustainable agricultural.

Mrs. SMITH. You are making a fine statement, but your time is up. Could you finish in 15 seconds?

Ms. MILLER. In 15 seconds?

Mrs. SMITH. Yes, please.

Ms. MILLER. Is that five minutes?

Mrs. SMITH. Yes, it is. In fact, it was six. I'm sorry. I would like to let everybody run overtime, but we have a very full list. We have to keep the time.

Ms. MILLER. Yes. Okay. The goal: redirection. We ask this committee to redirect ARS and CSR research for $117 million into sustainable agriculture.

We ask you to retrain our extension agents in sustainable agriculture and multi-disciplinary research funded at $40 million, and change the administration overall. We ask you to change the marketing emphasis and redirect research dollars into marketing so that the entire redirection effort is at $231 million with an overall goal of redirection.

Mrs. SMITH. Thank you very much. We appreciate your testimony.

[Ms. Miller's prepared statement follows:]

Consumer Federation of America

TESTIMONY OF PEGGY MILLER, CONSUMER FEDERATION OF AMERICA
BEFORE THE HOUSE APPROPRIATIONS SUBCOMMITTEE
ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

MARCH 27, 1990

1424 16th Street, N.W., Suite 604 • Washington, D.C. 20036 • (202) 387-6121

Mr. Chairman, Members of the Committee, my name is Peggy Miller. I am here today on behalf of the Consumer Federation of America (CFA), a non-profit organization representing over 240 national, state, and local organizations who in turn represent over 50 million consumers in this country.

Consumers are deeply concerned over the state of our food system, including the impacts of our current food production and distribution system on food safety, water supply and safety, human and animal health, and the overall state of our rural economy.

I have come today to request this Committee to redirect the goals of our agricultural research, extension and marketing system as well as to specifically fund the beginnings of this redirection in the FY 1991 appropriation at the level of $231 million dollars of Agricultural Research Servicem, Cooperative State Research Service, Extension Service, Cooperative Extension, and Agricultural Marketing Service funds. These funds need to be redirected into research, extension training and administration, and major marketing efforts in support of sustainable agriculture and marketing practices.

The overall goal redirection we seek is redirection of our farm and food system policies and programs so they adhere to one overall, clear goal: the achievement of a sustainable agriculture system that produces affordable, safe, nutritional food, fiber and feed while it sustains human and animal health, water quality and supply, our soil base, our wildlife, our environemnt, a diverse rural economy and the farmer's income.

This sustainable food production and marketing system would be based on skilled, multidisciplinary, scientific use and integration of:

--natural cycles and controls, including natural fertilization, weed and pest control;
--crop and genetic diversity, local climatological and economic sensitivity;
--tilth buildup through crop rotation, diversification and alternative tillage;
--integrated farm systems including reduction of nonrenewable inputs, reduction of synthetic inputs, use of on-farm resources, soil conserving systems, alternative animal production systems, concern for human and animal health and socio-economic concerns;
--an aggressive domestic and international marketing system geared to accomodate and to sell organic and sustainable agriculture-related crops through advanced analysis, data gathering, demonstration testing, international negotiations, express systems.

Attached to my statement is the Sustainable Agriculture Initiative, supported by a number of organizations, and drafted

as a coalition effort. This initiative points to $231 million dollars of needed research, extension training and marketing efforts needed to assist our overall research and extension system to move in the direction of sustainable agriculture.

The breakdowns of this initiative are the following:

I. Research Redirection: $113 million

A. Basic, applied, multidisciplinary, and systems research on the development and impact of sustainable farming systems as they relate to:

* water quality
* water conservation
* wildlife habitat
* food safety/quality
* farmer health and safety

B. Basic and applied research to develop and refine biological control and pest management systems, including urban/non-farm pest management and sustainable systems.

II. Low-Input Sustainable Agriculture Program: $50 million

A. Full-scale funding for the basic LISA research, extension, and education program.

B. A new federal-state partnership program to encourage state sustainable agriculture research, extension, and education through matching grants.

C. A special grants program to develop and refine sustainable agriculture handbooks and technical guides.

III. Extension and Outreach: $43 million

A. Re-tooling/training program for all county agents on sustainable agriculture systems, including urban applications, by means of a competitive grants program, funded by Extension 3d funds and issued through the LISA system on a state or regional basis.

B. Establishment of national and state coordinators within Extension for sustainable agriculture coordination, promotion, and programming.

C. Continuation of the ATTRA information service.

IV. Marketing Research and Development: $25 million

A. National and international market research to increase profitability and competitiveness of sustainable agriculture products.

B. Market information dissemination and market news activities in support of sustainable agriculture.

C. Market development programs to promote products from diversified sustainable agricultural systems.

Mr. Chairmen, we have a vast research, extension and marketing system established in this country. This system has done a great deal to achieve the major yield accomplishments we have all witnessed in these last three decades.

Still, like with any major system that has brought about major accomplishments in such a short period of time, there have been very distinct and very disturbing problems that have resulted from this high-input form of agriculture production and distribution.

82% of consumers are deeply concerned about pesticide residues on their food. Farmers and farmworkers are experiencing tremendous health problems related to chemical applications. Our water, both ground and surface, contains increasing levels of toxics, due to heavy applications on the land to sustain the current yield goals. Water supply is diminishing in the south central and southwestern areas of this country, supply that cannot easily be replenished. We have lost a great deal of genetic diversity due to the monocultural state of this form of agriculture production.

Sustainable farms exist throughout the country because many farmers have been dedicated to achieving reduction in inputs due to the positive economic, health and environmental impacts of such farm approaches, as well as the shelter they experience from drought and market fluctuations resulting from tilth buildup, input reduction, and crop diversity.

These farms and farm demonstrations have shown strong, beneficial impacts on water quality, water conservation, food safety, as well as crop diversity, while holding to a strong yield capability. Due to the results of such research to-date, we believe that major redirection of research and extension efforts can be and need to occur.

I realize that some research and extension efforts are underway to try and alleviate these problems. But many of these current research efforts are being carried out within a one-goal orientation. There is very little integration of the current agricultural research being carried out presently to reduce toxic inputs, and conserve water and energy.

As importantly, there is very little consideration of the need to research and integrate natural controls, including crop rotations, tilth buildup, trap cropping, along with other forms of benign control such as benign insect control, input reductions, and conservation tillage.

Without such integration and emphasis on biological and natural controls, much of the research ongoing in input reduction or even on direct relationships to natural cycles achieves very little good in producing an overall useable agricultural practice on the fram.

In addition, the use of sustainable agriculture practices, which includes the integration of natural cycles, crop rotations along with the use of on-farm resources, and low input technologies, requires less capital for entering our farm system, which helps to provide an opening to young people wanting to farm.

Furthermore, virtually no concentrated attention is being given to training our county agents in the complete knowledge base required to transfer what is known about sustainable farm techniques.

Most of our county extension agents were educated at the height of the system's emphasis on high input production. Like any corporation undergoing needed redirection, we need to re-tool our county agents, to retrain them in multidisciplinary problem solving and sustainable agriculture technologies.

Along with research and extension redirection, there must be a concerted thrust to place far greater emphasis within our marketing sector on the sale of resource-conserving and sustainable agriculture crops.

Until our Special Trade Representatives, our Secretary of Agriculture, and our marketing data networks and demonstration centers incorporate these crops into their trade agenda, we will not be able to move such farm products into the mainstream system. It is time for such attention to be given and we request this Committee to address these needs through a complete marketing redirection program.

Proposals:

1)Extension Service:

a)Training:

Sustainable agriculture requires far greater emphasis of on-farm management, use of multiple skills and sciences, and a new array of tools. Our agents have been placed in the unenviable position of knowing very little about the technologies that many farmers are now asking for.

We propose that all county agents be retrained over the course of five years. We do not want just a few specialists. We want all agents to understand these systems. Those who now work in urban areas can be trained in sustainable systems for urban areas, in pest and plant management based on lowered inputs and natural systems, like those being encouraged for on-farm use.

$20 million in funding should come out of 3-d formula funding, distributed by the LISA regional board system through competitive grants, and provide for training that is regionally specific. The Extension Service would administrate the program, develop the testing and certification needed to assure that training has been

reliable and thorough.

Any person wanting to become a county agent within three years from the date of enactment would have to demonstrate knowledge of such systems.

b) Overall administration and sustainable agriculture extension programs are needed. They are listed in the Initiative and include a national as well as state coordinators for sustainable agriculture, and the funding for demonstration farms, information dissemination, data analysis, and other technology transfer needs. We have asked for $20 million in redirection.

2) LISA-- We further propose that this Committee increase the appropriation for the Low Input Sustainable Agriculture Program within USDA to $50 million.

This overall competitive grant structure has had an excellent track record todate in encouraging integrated, sustainable agriculture research programs around the country. In the light of the current emergencies throughout the system, it is time to move this program into a senior position by providing it with far greater funding.

3) In the redirection of ARS and CSRS funds we have asked that such redirections be concentrated in particular areas including multidisciplinary research on the impacts of sustainable agriculture on water quality; on human and animal health and food safety, including new food distribution systems needed to handle and process foods to maintain their safety; on water conservation; on developing additional forms of biological control within the IPM systems; on sustainable approaches to urban plant and pest management. We have asked for a total of $113 million in redirected funds for such efforts which are spelled out more thorough in the attached Initiative.

Mr. Chairmen, dwell for a moment on the positive results of sustainable agriculture, which integrates practices that address consumer, environmental and farmer concerns:

** strong yields--70-110% of yields under high input farming;
** reduction of high inputs, chemical, water and energy, in the ranges of 60-90% leading to immediate water quality improvements;
** soil erosion improvements from 20-95%;
** economic stability during droughts;
** ability for young farmers to enter farming due to low capital requirements of sustainable farming;
** rural development advancements due to capability of smaller farmers to success and flourish;

It is time for redirection. We ask for your support.

SUSTAINABLE AGRICULTURE INITIATIVE
FOR THE
RESEARCH, EXTENSION, AND EDUCATION TITLE
AND THE MARKETING TITLE
OF THE 1990 FARM BILL
AND FOR THE
FY 1991 AGRICULTURAL APPROPRIATIONS ACT

Endorsed by:

Center for Science in the Public Interest

Consumer Federation of America

Consumers Union

Environmental Policy Institute

Friends of the Earth

Institute for Alternative Agriculture

Natural Resources Defense Council

Public Voice for Food & Health Policy

Sierra Club

Sustainable Agriculture Coalition

Summary

SUSTAINABLE AGRICULTURE INITIATIVE

BUDGET REQUEST: $231 million of redirected funds in FY 1991

Sources: ARS, CSRS, ES, CES, AMS, FAS

I. Research Redirection: $113 million

A. Basic, applied, multidisciplinary, and systems research on the development and impact of sustainable farming systems as they relate to:

* water quality
* water conservation
* wildlife habitat
* food safety/quality
* farmer health and safety

B. Basic and applied research to develop and refine biological control and pest management systems, including urban/non-farm pest management and sustainable systems.

II. Low-Input Sustainable Agriculture Program: $50 million

A. Full-scale funding for the basic LISA research, extension, and education program.

B. A new federal-state partnership program to encourage state sustainable agriculture research, extension, and education through matching grants.

C. A special grants program to develop and refine sustainable agriculture handbooks and technical guides.

III. Extension and Outreach: $43 million

A. Re-tooling/training program for all county agents on sustainable agriculture systems, including urban applications, by means of a competitive grants program, funded by Extension 3d funds and issued through the LISA system on a state or regional basis.

B. Establishment of national and state coordinators within Extension for sustainable agriculture coordination, promotion, and programming.

C. Continuation of the ATTRA information service.

IV. Marketing Research and Development: $25 million

A. National and international market research to increase profitability and competitiveness of sustainable agriculture products.

B. Market information dissemination and market news activities in support of sustainable agriculture.

C. Market development programs to promote products from diversified sustainable agricultural systems.

Definition

Sustainable agriculture refers to an agricultural production and distribution system that achieves the integration of natural, biological cycles and controls, protects and renews soil fertility and tilth and the natural resource base, optimizes the management and use of on-farm resources, minimizes the use of non-renewable resources and purchased production inputs, provides an adequate and dependable farm income, promotes opportunity in family farming and farm communities, and minimizes adverse impacts on health, safety, wildlife, water quality, and the environment.

Sustainable agriculture utilizes a combination of practices which are incorporated into an integrated, biologically-intensive, whole farm resource base management system. Approaches to sustainable agriculture include:

* accurate diagnoses of the production opportunities of the local agroecosystem;
* selection of crop and livestock varieties well-suited to on-farm resources;
* diversity of crops and livestock species to enhance stability
* integration of animal and crop agriculture, where appropriate;
* soil building techniques to maintain and elevate soil fertility and tilth;
* crop rotations to interrupt pest cycles and build soil fertility;
* enhancement of natural control and supression of pests;
* reduction of purchased non-renewable inputs to the lowest practicable level;
* maintainence of protective cover on the soil;
* alternative tillage practices and mechanical weed control;
* low-investment animal production facilities and systems; and
* increased application of hands-on management and skilled labor.

The overall goal of sustainable agriculture is to make the farming system more ecologically sound, economically viable, and socially just and humane. Sustainable agriculture aims to:

* enhance economic resiliency, productivity, productivity, and competitiveness;
* increase the share of gross farm receipts retained in the form of returns to labor and management;
* conserve soil, water, energy, and natural resources;
* improve soil fertility and soil tilth;
* protect the health and safety of farmers, farmworkers, and consumers;
* produce a safe and affordable food supply;
* protect water and air quality;
* increase opportunities for self-employment in agriculture; and
* help foster viable rural communities and economies.

I. RESEARCH REDIRECTION: ARS and CSRS

A. WATER QUALITY

Need: Research, development, and demonstration of profitable sustainable agricultural systems that prevent water quality degradation, with an emphasis on biologically-intensive, whole farm systems research and rapid diffusion of technologies and practices. Specific attention to research developing and integrating the use of:

* soil building and filtering capabilities;
* source reduction systems, including crop diversification and rotation;
* management practices for soil fertility packages which rely on legume-based rotations and/or manure;
* nitrogen waste control techniques for sustainable systems;
* improved, farmer-friendly, locally-calibrated soil and water testing;
* low-cost, accessible assessment systems to evaluate structures, practices, and systems for pollution prevention; and
* socio-economic study of the barriers and impact of widespread adoption.

Mechanism: Incorporate into ARS and CSRS and the "Water Quality Initiative."

Funding: $40 million.

B. WATER CONSERVATION

Need: Multidisciplinary research on the direct impact of existing sustainable agriculture methods, and development of additional sustainable technologies, on enhanced water conservation, particularly for the southwest and south central parts of the country. Enlarge upon existing studies showing significant water savings from sustainable agriculture techniques. Specific attention to research on:

* soil tilth;
* drought tolerant plants;
* management systems to utilize scarce soil moisture;
* practices to reduce evaporation and crop water use and to increase soil water absorption and holding capacity.

Mechanism: To be conducted at leading agricultural universities in the central and southern Plains and the dryland areas of the Western states, through CSRS.

Funding: $20 million.

C. SPECIAL ON-FARM DEMONSTRATIONS

Need: Special on-farm demonstrations for environmentally sensitive areas, including critical watersheds, wetlands, sinkholes, and special fish and wildlife habitats, to be carried out cooperatively by private foundations, land conservancy organizations, and farm and sustainable agriculture organizations. Emphasis on pollution prevention, farmer participation and rapid diffusion of technologies. Research sites could include CRP land after the contracts end or land designated for permanent easement programs.

Mechanism: Special grants through CSRS.

Funding: $3 million.

D. HUMAN AND ANIMAL HEALTH AND SAFETY

Need: Applied research to develop, refine, and encourage the adoption of profitable sustainable farming and food preservation and processing systems which improve food safety, reduce additives and residues, protect the health and safety of agricultural and other food system workers, safeguard animal and wildlife health and welfare, and otherwise diminish known and potentially adverse impacts on health and safety within the farm and food system. Analysis of the impacts of sustainable agriculture systems on human and animal health and food and feed quality.

Mechanism: Incorporate into ARS and CSRS and the "Food Safety Initiative."

Funding: $20 million.

E. BIOLOGICAL CONTROL AND INTEGRATED PEST MANAGEMENT

Need: A significant increase in research on biological pest control systems and techniques, including biologically-intensive Integrated Pest Management strategies that promote source reduction. Emphasis on pest resistant plants, natural enemies, crop rotations, host resistance, cultural management, etc.

Mechanism: Additions to existing ARS and CSRS programs.

Funding: $20 million.

F. URBAN PLANT, NUTRIENT, AND PESTICIDE MANAGEMENT

Need: Basic and applied research to develop, refine, and disseminate urban sustainable methods to protect and conserve natural resources, reduce or eliminate the use of chemicals in the production and maintainence of urban landscapes (residential, private, and public), and control pests within urban and suburban areas. Program would include lawns, gardens, parks, public landscapes, golf courses, and recreational areas, and would address ground and surface water, air quality, safety concerns.

Mechanism: Incorporate into ARS and CSRS.

Funding: $10 million.

II. LOW-INPUT SUSTAINABLE AGRICULTURE PROGRAM

A. BASIC PROGRAM

Need: A regional, multidisciplinary, competitive grants research, demonstration, and education program to focus on sustainable agricultural practices and systems. Objectives include enhanced sustainability, productivity and profitability, increased opportunities for self-employment in farming, conservation of natural resources, optimal use of on-farm production resources, reduction in non-renewable production inputs, prevention of water quality degradation, promotion of crop and enterprise diversification, protection of human and animal health and safety, and enhancement of wildlife habitat.

Mechanism: The "LISA" program, as improved by proposed reauthorization language.

Funding: $50 million total ($30 million in the basic program plus $20 million for special component programs (B & C below).

B. MATCHING GRANT PROGRAM

Need: A federal-state partnership to encourage the creation and enhancement of state-level sustainable agriculture research, extension, and education programs. Federal matching money to be available through the LISA regional administrative councils. To encourage cooperation, priority would be given to programs that demonstrate effective participation and coordination between a variety of state and federal agencies, as well as the direct participation of farmers and ranchers.

Mechanism: Incorporate into the "LISA" program.

Funding: $17 million of the $50 million total in II.A.

C. TECHNICAL GUIDE GRANT PROGRAM

Need: A special component of the LISA program to encourage widespread participation in the development and ongoing revision of USDA state-specific handbooks and field level technical guides that incorporate the full range of sustainable agriculture farm management concerns. The guides will be the basis of future comprehensive integrated farm management plans, including information on selection of crops and and crop-plant varieties, rotations practices, tillage systems, soil building, nutrient managment, pest management, livestock management, soil, water and energy conservation, and farm economics.

Mechanism: Incorporate into the "LISA" program.

Funding: $3 million of the $50 million total in II.A.

III. EXTENSION AND OUTREACH

Need: The Extension Service is at a crossroads of technological change which requires a redirection of goals, re-tooling of county agents, and multidisciplinary approaches so that this vast technology transfer and education system will reflect the 1990's technology age. Therefore, a major national priority is needed within the Extension Service to provide information, analysis, training, education, and technical assistance to farmers attempting to design and implement sustainable agricultural systems. Farmers and urban people need access to the best information and skills from extension on sustainable techniques and systems and the use of multidisciplinary problem-solving methods. To facilitate the active incorporation of this mission into the agency, both a training program and an outreach program are required.

A. TRAINING PROGRAM

Need: An extensive and ongoing training program in sustainable agriculture and multidisciplinary problem-solving would be established to bring all county agents and specialists, and relevant Extension Service personnel, up to speed on the state of knowledge and practical experience.

1. Training for 20 percent of agents each year, so that by the end of five years all agents are trained. Emphasis on basic agroecology, sustainable agriculture methods (and urban, nonfarm applications), and multidisciplinary problem solving, with provision for regular updates. Testing would be developed and administered by the Extension Service to ensure that training goals are met.

2. Beginning three years from date of enactment, all new agents coming into Extension must be able to prove knowledge through a testing process of basic agroecology, sustainable agriculture, and multidisciplinary problem solving techniques, or pay for their own training in the above program, or find training elsewhere.

Mechanism: Use Smith-Lever 3d funds to contract a competitive grants program through the "LISA" regional administrative councils.

Funding: $20 million

B. SUSTAINABLE AGRICULTURE EXTENSION PROGRAM

Need: Creation of a Sustainable Agriculture Extension Program to coordinate and promote a new priority mission. A national coordinator and state coordinators would be named, with responsibility for developing and implementing a national and statewide sustainable agriculture education, outreach and information delivery program. Responsibilites to include:

- collection, evaluation and dissemination of existing information;
- validation, demonstration, and dissemination of new information;
- cooperation in on-farm research and demonstration;
- extension programming, including farmer input and feedback, in the design of new and ongoing research;
- technical assistance in design and implementation of farm management plans;
- development of information sources on diversification, on-farm processing, and on-farm energy generation;
- assistance in developing farmer information exchange networks;
- special outreach programs in areas highly susceptible to groundwater contamination; and
- integration of sustainable agriculture concerns in all aspects of extension.

Programming would include a multidisciplinary approach to transfering sustainable agriculture technologies and integrated systems, including crop rotations, soil and tilth building, reduced input practices, soil conservation practices, water quality and conservation considerations, habitat protection, alternative energy, biological control and IPM, health and safety considerations, and urban nutrient and pest management.

Mechanism: Incorporate into the ES and CES.

Funding: $20 million.

C. TECHNOLOGY TRANSFER

Need: Improved information service to provide farmers and gardeners with the latest and most complete research information available about sustainable agricultural practices and systems, including 800-number information service, issue briefs, bibliographies, database search results, and consultation with sustainable agriculture organizations and state and federal agencies who serve as information sources and multipliers.

Mechanism: Additional support to ATTRA.

Funding: $3 million.

IV. MARKETING RESEARCH, PROMOTION, AND EXPORT COMPETITIVENESS

A. MARKET RESEARCH

Need: Advances in sustainable agriculture production will be limited without adequate markets. Therefore, market research and development to advance the promotion and profitability ot sustainable agriculture production is urgently needed. Research should focus on the prospects for developing domestic and international markets for food, feed, and fiber produced with sustainable agricultural methods. Special attention to research, including competitive grants, on:

- national and international information and express marketing networks; and
- analysis of the expansion capabilities of such markets and the impact of broadening such markets on international trade positioning (in coordination with Office of Special Trade Representative and Office of the Secretary);
- marketing of new crops and new uses of existing crops which (a) can be grown on highly erodibe lands at acceptable rates of erosion, and (b) when added to rotations reduce the need for petro-chemicals and other purchsed inputs;
- processing and marketing opportunities appropriate to location on farms and in small rural communities;
- analysis of the impacts of marketing policies, programs, and practices (including grading standards) on food safety and adoption of sustainable agriculture; and
- development of alternatives to policies, programs, and practices that discourage the growth of sustainable agriculture.

Mechanism: Incorporate into FAS, AMS, ARS and CSRS, including the agricultural trade development center network.

Funding: $10 million.

B. MARKET INFORMATION DISSEMINATION AND MARKET NEWS

Need: Regional sustainable agriculture marketing nerve centers and enhancement of existing market news services to gather and provide daily data on price, quality and volume movements, and monitor domestic and world supply and demand conditions over time. National clearing house to facilitate buyer-seller contact and to provide US producers with information about foreign customs, distribution networks, trade policies, currency relationships, etc.

Mechanism: Incorporate into AMS and FAS.

Funding: $5 million.

C. MARKET DEVELOPMENT

Need: Market development programs that would promote the products of diversified sustainable agriculture systems both here and abroad and develop appropriate distribution, handling, labeling, and merchandising tools and practices. International activities would include trade shows, training for ag attaches in promotion of sustainable agriculture products, and development of promotional materials and trade contacts.

Mechanism: Incorporate into AMS and FAS.

Funding: $10 million.

TUESDAY, MARCH 27, 1990.

REA

WITNESS

BOB BERGLAND, NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

Mrs. SMITH. Mr. Bergland, you are next. I know that Mr. Bergland is here wearing his REA hat. He is a former Secretary of Agriculture.

Do you have someone with you, Mr. Bergland?

Mr. BERGLAND. Mrs. Smith, Mr. Stork was unable to come from Missouri.

Mrs. SMITH. I see. We are delighted that you are here.

Mr. BERGLAND. Thank you very much.

I have a very short statement I would like to include for the record and just give a very quick summary.

The Rural Electric Cooperative has continued to carry certain burdens because we serve areas of low population density. As a result, we have less than the utility average in revenue per mile. We have a higher utility average in investment per consumer. And, unfortunately, about 80 percent of our systems have higher retail electric rates than their neighboring utility company. We do, therefore, operate at a distinct economic disadvantage as compared to other utilities because we serve the rural areas of the country and we do so very gladly. It does, however, pose a continuing economic problem for us.

We notice that there are now $600 million in backlog that the REA cooperatives are applying for credits, and it exceeds the amount available by about a year. So we are urging that the Rural Electric Insured Loan Fund be increased by $200 million up to $822 million as a minimum in order to work down that list of backlog which is so critical to the cooperatives in meeting their basic charter.

We urge the continuation of the $813 million in loan guarantees. While we are not building powerplants yet, we expect that there will be an increased demand for loan guarantees to meet the requirements of the Clean Air Act. The Congress most certainly will pass amendments to that act and will require electric cooperatives to come into the market to borrow money to buy equipment to meet the requirements of that act—which we are supporting, incidentally, along with other elements of the industry.

We have a continuing problem with refinancing. About $5 billion in FFB debt is carried by these cooperatives at interest rates over 10 percent, adding about $50 million a year to the retail electric cost.

We have tried unsuccessfully for six years to get the Administration to agree to allow us to borrow money in the private market and pay off those government loans. It would generate a considerable amount of cash and would help everyone, but the FFB has its own agenda.

Mrs. Smith, that concludes my opening statement.

Mrs. SMITH. We now have our regular chairman here, but let me say that I appreciate that statement. I wish I could take time to ask you some questions, but I don't dare take time on this day when our schedule is so full. We do appreciate your coming.

Mr. BERGLAND. Thank you, Mrs. Smith.

Mrs. SMITH. Mr. Akaka?

Mr. AKAKA [assuming Chair]. Thank you very much, Mrs. Smith.

Mr. MYERS. It is always a pleasure to see our former colleague, Bob. When he was working for a living he used to be sharing right along beside us. Now he has gone out to pasture.

Mr. BERGLAND. There is a life after Congress, Mr. Myers. Mrs. Smith is about to find out. She looks wonderful, too.

Mr. MYERS. I'm trying to stay far away from her. It may be contagious and I don't want to catch it.

Mr. AKAKA. Mr. Skeen?

Mr. SKEEN. I have no questions. Thank you, Bob.

Mr. AKAKA. He doesn't say very often that he has no questions. Well, I am delighted to see you here.

Mr. BERGLAND. Thank you, Mr. Chairman.

Mr. AKAKA. I know the rest of the Members are happy to see you also.

Mr. BERGLAND. Thank you, sir.

Mr. AKAKA. I see that you are still working hard. I hope that the $850 million you are talking about in guaranteed loans can become reality—especially when it relates to the Clean Air Act. I wish you well.

Mr. BERGLAND. Thank you, Mr. Chairman.

Mr. AKAKA. It is so good to see you.

Mr. BERGLAND. The thing that makes it different with the cooperatives is that we have very little equity. These cooperatives were started in recent years with borrowed money. We started with nothing and we haven't had a chance to really get ahead of it. Without a government guarantee we would have a terrible time to comply with the requirements of the act.

Mr. AKAKA. Thank you very much.

Mr. BERGLAND. Thank you, Mr. Chairman.

[Mr. Bergland's prepared statement follows:]

Testimony of

Bob Bergland
Executive Vice President
National Rural Electric Cooperative Association

before the

U.S. House of Representatives

Committee on Appropriations
Subcommittee on Rural Development, Agriculture and Related Agencies

March 27, 1990

EXECUTIVE SUMMARY: Rural electric systems continue to provide high quality electric service despite operating under several disadvantages, including: (a) low consumer revenue and densities; (b) high investment per consumer, and (c) the fact that 79 percent of rural electric systems have rates higher than their neighboring utilities.

Loan demand from distribution systems has risen, and there is currently a backlog of more than $600 million in applications for insured loans at the Rural Electrification Administration (REA). In view of this, the Association recommends the utilization of unobligated funds and an increase in the insured loan floor. The Association also recommends continued funding of the Rural Economic Development Subaccount, an important program which promotes rural area development and merits continued support.

For REA loan guarantees of Federal Financing Bank (FFB) loans, the Association recommends the current loan levels, but points out that anticipated amendments to the Clean Air act will increase guaranteed loan demand. A continuing problem for rural electric generation and transmission cooperatives is the fact that, despite six Congressional initiatives, they cannot prepay and refinance some $5 billion in FFB debt carrying interest rates in excess of 10 percent. As a result, rural electric consumers are carrying $50 million in additional cost each year.

Statement of Bob Bergland

Mr. Chairman and distinguished Members of the Committee:

My name is Bob Bergland. I am executive vice president of the National Rural Electric Cooperative Association (NRECA), the Washington, DC-based service organization of the nation's 1,000 nonprofit, consumer-owned rural electric systems, which provide electric service to more than 25 million rural Americans in 46 states.

Accompanying me today is the chairman of NRECA's Standing Committee on Legislation, Mr. Frank Stork, who is general manager of the Association of Missouri Electric Cooperatives in Jefferson City.

Before I discuss NRECA's recommendations for REA lending levels, I would like to provide you and the members of the Committee with a brief report on the "State of the Program."

* Rural electric systems continue to provide high quality and reliable electric service to more than 10 percent of the population of the nation. Rural electric lines span some 75 percent of the nation's land mass.

* Recent data show that rural electric systems continue to operate under the same disadvantages that have traditionally existed in the program. Rural electric systems now serve an average of 5.2 consumers per mile of line compared with 32 customers per mile of line for investor-owned electric systems, and 41 per mile for municipal systems.

* Revenue per mile of line for a rural electric co-op amounts to $5,752 annually, compared to the $54,402 collected by investor-owned utilities and $59,134 earned annually by municipal systems. Conversely, co-ops have invested $1,634 in distribution plant for each consumer compared to $1,205 per customer for investor-owned utilities and $1,183 per customer for municipal systems.

* Today, more than 79 percent of all rural electric systems have higher rates than their neighboring utilities. This disparity can be traced to several factors:

  -- The inherent disadvantages of serving sparsely populated areas;

  -- The fact that rural electrics serve relatively few commercial and industrial loads compared to other utilities. During the past year, only about one-third of rural electric sales went to commercial and industrial consumers, compared to two-thirds in the case of municipal and investor-owned utilities. The relative absence of commercial load on co-op lines decreases load factor and increases costs to all rural electric consumers, and

-- The fact that nearly 70 percent of the generation capacity of rural electric systems has been placed into operation during the past ten years--a period of inflated construction costs and high interest rates.

* Rural electric systems serve areas that have been hard hit by an ailing rural economy. This has drastically reduced load growth for many rural electric systems. In fact, today 144 of the nation's 930 rural electric distribution systems are losing consumers. This is an improvement over last year, and we hope for future improvements. However, this factor, combined with the high cost of constructing new generation plant, has resulted in defaults by six generation and transmission (G&T) cooperatives. Again, I can report that workout plans and/or mergers are under way to get these systems back on track.

I mentioned that we hope for improvements in the rural economy. This is reflected in the number of loan applications from rural electric distribution systems.

At this time last year, there was a backlog of loan applications of approximately $400 million. That figure has grown today to more than $600 million.

Congress has, in the past several years, set both a floor and a ceiling for rural electric insured loans. If the Administrator were to have made loans to the ceiling in recent years, the backlog--essentially a year's worth of loans--would not exist.

Also, if the Administrator were to use unobligated insured loan funds carried over from prior years (approximately $251 million), the backlog could be substantially reduced.

We respectfully ask Congress to require the Administrator to utilize those unobligated funds to meet loan demand in the next fiscal year.

I would also call to the Committee's attention that pending amendments to the Clean Air Act may well require electric utilities to install new equipment and develop new technology to deal with the substance of those amendments.

Rural electric cooperatives generate approximately 8 percent of the coal-fired electric energy produced in the nation; however, they own 20 percent of the nation's flue-gas desulfurization units, or scrubbers. Approximately 44 percent of our generation is equipped with scrubbers. The reason for this is that a much higher percentage of rural electric generation was built after enactment of the Clean Air Act of 1970.

Nonetheless, some rural electric generation and transmission cooperatives will have to buy new equipment and employ new techology to comply with whatever amendments the Congress approves. While demand for loan guarantees has tapered off in recent years, I anticipate that the need for new financing will increase markedly. Again, we respectfully bring this to the attention of the Committee as you consider setting loan guarantee levels for Fiscal Year 1991 and beyond.

I would also report to the Committee that despite six separate and very clearly stated initiatives by the Congress, rural electric G&Ts have some $5 billion in Federal Financing Bank (FFB) loans carrying interest rates in excess of 10 percent. Had these systems been able to take advantage of recent declines in interest rates, a savings of some $50 million or more per year could have been passed on to rural electric consumers.

We continue to be at a loss in understanding why the FFB has permitted foreign governments to prepay some $9 billion in FFB loans and refinance at lower interest rates while not permitting rural electric systems to do the same.

One final comment before I get into the specific recommendations for loan levels, and I quote directly from a resolution passed by our membership in February: We commend the Congress for treating the Rural Electrification Administration (REA) Revolving Fund in a manner similar to other U. S. Department of Agriculture revolving funds by providing appropriations to offset losses." I would add my personal appreciation to you, Mr. Chairman, and to the Committee for your actions in this respect.

Mr. Chairman, what follows are the recommendations of the Association, based on our annual Loan Fund Survey and, again, on a resolution of the membership, for rural electric loan levels and related matters for FY 1991.

We recommend:

* the continuation of REA's current supplemental ratios and criteria, and

* the continuation of current general funds policy which prohibits REA from denying loan approvals and advances based on a system's general funds level.

* With regard to the insured loan levels, in order to reduce the loan application backlog and meet rising demand for loan funds, we recommend that the floor for insured loans from the REA Revolving Fund be raised to $822.05 million and that the Administrator of the REA be instructed to use $251 million in unobligated funds carried over from prior years.

Again, I would quote from the resolution of the membership: "We urge Congress to authorize adequate levels of insured financing to meet the increased needs of rural electric systems as reflected by the growing loan application backlog and as indicated by the National Rural Electric Cooperative Association (NRECA) loan fund survey. In the past 10 years, insured funds have declined substantially despite continued inflation. However, insured levels must now be increased to meet the higher demands."

With respect to loan guarantees, we recommend that the 100 percent REA guarantee of FFB loans be retained, and that loan levels be retained at the current $813.45 million floor and the $1.962 billion ceiling for FY 1991, with the caveaf that additional loan funds may be necessary for rural electric systems to comply with Clean Air Act amendments in the out years.

Finally, we recommend a $10 million appropriation to the Rural Development Subaccount for the purpose of encouraging rural economic development. This program is working well and merits continued support.

I would be happy to answer any questions the Committee may have.

Thank you.

TUESDAY, MARCH 27, 1990.

REA

WITNESS

JOHN O'NEAL, NATIONAL RURAL TELECOM ASSOCIATION

Mr. AKAKA. Our next witness is Mr. John O'Neal, National Rural Telecom Association.

Mr. O'NEAL. Thank you, Mr. Chairman.

Mr. AKAKA. Thank you for coming. We welcome you and will put your written testimony in the record following your oral presentation.

Mr. O'NEAL. Thank you very much.

I would like to take just a moment to comment on Mrs. Smith's retirement.

We are going to miss you, Mrs. Smith. It has been a pleasure working with you and your office over the years. We are going to miss your leadership on REA issues, as well as rural development issues generally. Rural America is going to miss your leadership.

Mrs. SMITH. Thank you very much. I am going to miss being here, too, but we are going to send a fine Member of Congress down from the 3rd District of Nebraska.

Mr. O'NEAL. Mr. Chairman, it is a pleasure to be here before you again this year to testify in support of a strong REA telephone program.

My name is John O'Neal. I am counsel to the National Rural Telecom Association. Our association is composed of commercial telephone companies that borrow their capital needs from REA to extend and modernize telephone service in rural areas.

Approximately 1,000, or 71 percent, of the nation's telephone companies borrow from REA. About three-fourths of those are commercial telephone companies.

REA borrowers serve over 5 million subscribers in 46 States. Their lines traverse over 1 million square miles, or 34.5 percent of the territory of the country, but less than 5 percent of the telephones.

The average borrower serves 982 route miles of line, which is about one-third of the way across the United States. The median borrower has only 2,200 subscribers, however. Borrower density is very low. It is about four access lines per square mile, which contrasts with over 80 amongst the regional Bell operating companies.

In accepting loan funds, REA borrowers assume an Act obligation to serve the widest practical number of rural users within their service area. We are proud to state once again for the record that there has never been a default in the REA telephone program. All loans have been repaid with interest in accordance with their terms, and some even in advance.

At the end of fiscal year 1989, a total of over $3 billion in principal and interest had been paid by telephone borrowers.

Mr. Chairman, the proposals contained in the President's budget this year would really curtail and phase out the REA program as we know it. There are no new initiatives or any new thinking here. Most of these proposals have been made to previous Congresses and

rejected. We oppose them because we know that, if adopted, rural telephone rates would increase further and service levels would surely deteriorate.

Mr. Chairman, continuation of a strong REA program is very important to rural America. The need for long-term, affordable capital for these systems may even be greater today than ever before.

We recognize the committee's continuing budget constraints, however, and therefore are recommending again this year that loan levels be retained at last year's levels for all three programs—the insured, guaranteed, and rural telephone bank loan programs. However, if the committee's budget allocations permit, we would request that the agency be required to approve loans to the extent that there are qualifying applications up to the maximum allowable amounts within the ranges prescribed.

Again this year the President's budget contains no request for capitalization of the Rural Telephone Bank. The bank is the cornerstone of financing for REA telephone borrowers for the future, and hopefully will be the institution which will ultimately provide all their capital needs. Fulfillment of the bank's capital structure is vital in this process; therefore, we request that the committee continue the appropriation of 28.7 million in this year's bill, which is the same amount provided last year for government-purchased class A stock in the Telephone Bank.

Thanks to the efforts of this committee over the years, the program remains strong. And, thanks to your efforts, a substantial impediment to loan advances and approvals has been eliminated, and that is the REA general funds restrictions. We hope and recommend that the committee continue to extend the general funds prohibition in the 1991 bill.

We also appreciate the inclusion for the past two years of a provision which precludes REA from attempting to regulate the order of sequence of advances to borrowers under approved loans and request that this provision also be included in this year's bill.

Mr. Chairman, the REA program withstands these annual assaults because it is a sound Federal program that is time tested and works, and it is needed today more than ever before. Rapid technological change and Federal policies of competition and deregulation in the telephone industry underscore the need for targeted assistance to rural areas. Rate pressures and rural areas are already burdensome, with predictions that some rates will double or even triple in the foreseeable future. Without the credit assistance provided by REA, even greater pressure would exist for rate increases.

The important message is—and it is one that I know the committee recognizes—the value of this assistance to rural rate payers continues to far outweigh the cost.

Thank you, again, for the opportunity to present the views of our association concerning this vital program which we believe is as worthy today as it was when it was enacted in 1949.

Mr. AKAKA. Thank you very much for your testimony.

Mrs. Smith?

Mrs. SMITH. We appreciate your testimony. What you do is very important to rural America. It has been important and is important for the future. Thank you for coming.

Mr. O'NEAL. Thank you, Mrs. Smith.

Mr. AKAKA. Mr. Myers?

Mr. MYERS. Thank you, John. It is good to see you again.

Mr. AKAKA. Mr. Skeen?

Mr. SKEEN. My thanks also.

Mr. O'NEAL. Thank you, Mr. Skeen.

Mr. AKAKA. Finally, I want to commend you. I think it is a powerful message that we need to get out: no default in the REA telephone program. That is great news, and that tells us that you folks are doing a great job.

Mr. O'NEAL. Thank you.

Mr. AKAKA. Thank you very much.

Mr. MYERS. Just one more thing, Mr. Chairman.

Mr. AKAKA. Mr. Myers?

Mr. MYERS. Electricity is very important to rural America, but so are rural telephones—especially when there is someone ill or something like that. The benefactors aren't only the people who have telephones in rural America, but every person that has a telephone in the United States, regardless of how urban the area is. They now are connected to that rural telephone, unlike electricity. When we are in the city we don't know if somebody has electricity out there, but we sure know if they have a telephone and we are able to get in touch with them.

So these people that criticize rural electric for adding telephones really don't know what they are talking about because you have then got a contact. You can reach anybody in the United States now, where you couldn't do it when we were kids.

Mr. O'NEAL. It certainly benefits everyone in the United States, whether they live in a rural area or not.

Mr. MYERS. We used to have the crank. In fact, I have still got it.

Mr. O'NEAL. Hopefully we will get those replaced with these future loan funds.

Mr. AKAKA. To realize that for fiscal year 1989 your borrowers paid in $3 billion——

Mr. O'NEAL. That actually is a cumulative number, Mr. Chairman.

Mr. AKAKA. Cumulative. I see.

Mr. O'NEAL. The actual loan repayments were about 225 million, I believe, in principal and interest for that year.

Mr. AKAKA. Thank you very much for your testimony.

Mr. O'NEAL. Thank you.

[Mr. O'Neal's prepared statement follows:]

STATEMENT PREPARED FOR PRESENTATION BEFORE THE AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES SUBCOMMITTEE ON APPROPRIATIONS OF THE U.S. HOUSE OF REPRESENTATIVES

JOHN F. O'NEAL
GENERAL COUNSEL
NATIONAL RURAL TELECOM ASSOCIATION

MARCH 27, 1990

SUMMARY OF TESTIMONY REQUESTS

Project involved: Telephone loan programs administered by the Rural Electrification Administration

Actions proposed:

1. A continuation in FY 1991 of loan levels for the insured, guaranteed and Rural Telephone Bank lending programs in the ranges authorized for FY 1990 with the requirement that loans be approved, to the extent there are qualifying applications, up to the maximum allowable amounts.

2. An appropriation of $28.7 million dollars for the purchase of Class A stock by the government in the Rural Telephone Bank, representing the capital increment for FY 1991.

3. Inclusion in FY 1991 of the same provision as in previous acts prohibiting the denial or reduction of loans or loan advances based upon a borrower's level of general funds.

4. Inclusion in FY 1991 of the same general provision as in the FY 1990 Act (Sec. 635) which precludes regulating the order or sequence of advances to borrowers under approved loans.

Mr. Chairman, Members of the Committee:

My name is John F. O'Neal. I am General Counsel of the National Rural Telecom Association. Our association is comprised of commerical telephone companies who borrow their capital needs from the Rural Electrification Administration to extend and modernize telephone service in rural areas. Approximately 1000, or 71% of the nation's telephone companies borrow from REA. About three-fourths of these are commercial telephone companies. REA borrowers serve over 5 million subscribers in 46 states. In accepting these loan funds, they assume an obligation under the

act to serve the widest practical number of rural users within their service area.

Mr. Chairman, continuation of a strong REA program is very important to rural America. It is imperative that this vital program not be jeopardized by philosophical opposition or by unrealistic assessments of program needs. This Committee and the Congress as a whole have strongly supported the REA telephone program since its inception in 1949. We appreciate your past efforts and look forward to an even stronger REA program for the future.

We are proud to state once again for the record that there has never been a default in the REA telephone program. All loans have been repaid in accordance with their terms with interest. At the end of FY 1989, a total of over $3 billion in principal and interest had been paid by borrowers.

Ongoing Need for the REA Telephone Loan Programs

The need for the REA loan programs is as great today as ever before, possibly even greater than in the past. Much of the telephone plant in rural America was installed in the early 1950's and will soon be due for replacement. Technological advances make it imperative that rural telephone companies upgrade their systems to keep pace with these improvements and provide the latest available technology to their subscribers.

The REA loan programs have successfully increased the availability and quality of telephone service to rural homes and businesses. But the task is far from complete. New communications technology and the huge increase in computer use are leading us into a new Information Age.

As the rural infrastructure keeps evolving, the potential benefits for rural life and the rural economy are impressive. Interactive optical fiber can provide education opportunities in even the smallest towns comparable to hiring many extra teachers. Using communications for medical diagnosis, monitoring and even treatments like heart defibrillation can help combat the shortage of doctors and the rash of rural hospital closings. Improved emergency services can save lives. Businesses like telemarketing and insurance can thrive in rural areas, and telecommuting can become a realistic employment option. The success stories of Land's End in rural Wisconsin and the Citibank credit card operations outside Sioux Falls, South Dakota, would not be possible without modern telephone plant, including digital switching. In fact, there are also "cautionary tales" about businesses that can't expand or locate in rural America because the telephone system can't provide on line ordering yet.

The REA programs are already providing financing for digital switches, more fiber between central offices and for school and medical communications facilities, helping rural communities to reap the benefits of technology. In the future, improved technology and decreasing costs will allow broadband service to American homes and businesses. The FCC's Chairman has said wide broadband deployment is "essential to our continuing prosperity and global leadership."

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The REA programs are as necessary now as they ever have been: The NTIA Telecom 2000 report warned that unless rural areas are able to keep pace with urban technology upgrades, the widening gap in capabilities will make rural areas less attractive to businesses and people. Without an improved telecommunications infrastructure, as a recent Aspen Institute report put it, "major portions of rural America will be consigned to steady economic decline."

The amount of loan applications pending at REA are indicative of the increasing demands for upgraded service to rural areas. At the end of FY 1989, completed telephone loan applications at REA totaled $145.8 million. During the current fiscal year, additional applications totaling $187 million have been completed. As of January 31, 1990, REA had a total of $299.4 million in completed applications on hand for telephone loans. I know the Committee will agree that these figures, furnished by REA, amply demonstrate the ongoing need for this important program at current levels.

Because of continuing budget constraints, our association is recommending again this year that loan levels be retained at last year's levels. These are the ranges your Committee approved for FY 1990:

REA Insured Loans	$239.3 - 311.0 Million
Rural Telephone Bank Loans	$177.0 - 210.6 Million
REA Loan Guaranteeds	$119.6 - 138.8 Million

However, if the committee's budgetary allocations permit, we would request that the agency be required to approve loans, to the extent there are qualifying applications, up to the maximum allowable amounts within the ranges prescribed.

Administration's FY 1991 Proposals

Proposals contained in the President's budget again this year would severely curtail and phase out the REA program as we know it. For FY 1991, the administration proposes to eliminate insured and 100 percent guaranteed loans in their entirety and partially substitute 70 percent guarantees of private sector loans in the amount of $100 million for both programs. In addition, the administration seeks to accelerate privatization of the Rural Telephone Bank and repeal many of the bank reforms adopted in the 100th Congress.

Mr. Chairman, there are no new initiatives or any new thinking here. Most of these proposals have been made to previous Congresses and rejected. Also, there still have been no studies conducted which would support such radical proposals. No one knows for certain what the full impact or effects would be. But, whatever the potential impact, we know one thing is certain: rural telephone rates would increase further and service levels would surely deteriorate. For these reasons, we oppose them again this year.

Lack of Availability of Private Credit

Critics of REA argue that the need for the program is over because borrowers have the ability to borrow from private sources. But let us examine that. Private market lenders normally require 50 to 60 percent equities before they will extend credit. Based upon the latest available REA statistics, the average telephone borrower at the end of 1988 had a net equity of only 35 percent. Private lenders also require a one and one-half times interest coverage ratio test and prefer a ratio of 2 or higher. Most borrowers cannot meet the minimum test much less the preferred one. Also, it is important to note that most REA borrowers in relation to other telephone companies are very small and the territory they serve is extremely sparse. They serve over 1 million square miles or 34.5% of the territory but less than 5% of the telephones. The average borrower serves 982 route miles of line. The median borrower has only 2,219 subscribers. Borrower density is about 4 access lines per square mile. In contrast, the regional Bell operating companies average over 80.

Because of the relative small size of these loans, individual borrowers could not go to the private credit markets for capital. Even those few borrowers which could obtain credit in the private markets would find the terms extremely burdensome. Most banks or other lenders either will not or cannot make the long-term loans that are necessary for telco plant investment. Banks typically will lend for no more than 15 years in contrast to REA's loans of up to 35 years. And, of course, the interest rates would be prohibitive if the loans would be made at all.

Who would pay for these increased costs? As utilities whose rates are based upon their costs, increases in costs would necessarily have to be borne by rural ratepayers who are already burdened with extremely high rates. Federal access charges alone now total $3.60 per month and the cost of providing service in these high-cost, low-density areas continue to escalate. The REA loan programs provide targeted assistance to these areas.

Rural Telephone Bank

In 1981, Congress authorized the additional government purchase of $300 million of Class A stock from the Rural Telephone Bank in the amount of $30 million per year for 10 years. Again this year, the President's budget contains no request for this funding.

The Rural Telephone Bank is the cornerstone of financing for REA telephone borrowers for the future and hopefully, will be the institution which will ultimately provide for all of the debt capital needs for rural telephone systems. Fulfillment of the Bank's capital structure is a vital factor in this process. Unless the authorization is extended, FY 1991 is the final year for the infusion of government capital. Therefore, we respectfully request that the Committee continue the appropriation of $28.7 million next year (which is the same amount provided last year) for government purchase of Class A stock in the Rural Telephone Bank.

Conclusion

Mr. Chairman, the REA program continues to face its greatest challenges. However, it withstands these annual assaults because it is a sound federal program that is time-tested and works. And, it is needed today more than ever before. Rapid technological change and federal policies of competition and deregulation in the telephone industry underscore the need for targeted assistance to rural areas. Rate pressures in rural areas are already burdensome with predictions that some rates will double or even triple in the foreseeable future. Without the credit assistance provided by REA, even greater pressure would exist for rate increases.

The value of this assistance to rural ratepayers continues to far outweigh the costs.

Also, many fail to recognize that without the REA program the quality of telephone service in rural areas would also deteriorate. That is certain because the REA Act imposes a higher standard of service than would otherwise be required of borrowers. In the old days, if carriers provided service at all in rural areas it was only down the main roads because service on any other basis was not economically feasible. Today, thanks to the Congress and the REA legislation, telephone service is provided to the "widest practical number of rural users" in each borrower's service area -- a mandate that REA strictly enforces.

Thanks to the efforts of this Committee, a substantial impediment to loan advances and approvals has been eliminated -- REA's general funds restrictions. We hope and recommend that the Committee continue to extend the general funds prohibition in the FY 1991 bill. Otherwise, the successful operation of the REA telephone program would again be jeopardized.

We also appreciate the inclusion for the past two years of a provision which precludes REA from attempting to regulate the order or sequence of advances to borrowers under approved loans and request that this provision also be included in this year's bill. In the absence of such a provision, REA has indicated in recent regulations its intention to reinstate a procedure for controlling the order of advances on all outstanding loans. Such action would again threaten the orderly advance of funds to borrowers on approved loans.

Thank you again for the opportunity to present our views concerning this vital program which is as worthy and necessary today as it was when enacted in 1949.

TUESDAY, MARCH 27, 1990.

RURAL TELEPHONE PROGRAM

WITNESS

ROBERT SHELTON, NATIONAL TELEPHONE COOPERATIVE ASSOCIATION

Mr. AKAKA. Our next witness is Robert Shelton, National Telephone Cooperative Association.

We are happy to have you. Welcome. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

Mr. SHELTON. Thank you, Mr. Chairman. It is a pleasure to be here.

Mr. Chairman and members of the committee, my name is Robert Shelton. I am the Executive Vice President and General Manager of Penasco Valley Telephone Cooperative in Artesia, New Mexico, as well as the Chairman of the New Mexico Independent Exchange Carrier Group. In addition, I am also appearing on behalf of the National Telephone Cooperative Association, NTCA.

Because Penasco and most NTCA members participate in the Rural Electrification Administration—REA—and the Rural Telephone Bank—RTB—telephone lending programs, I appreciate this opportunity to review their ongoing necessity with you.

The REA and RTB telephone lending programs have played a vital role in developing the nation's rural telecommunications infrastructure. Despite these accomplishments, however, our job is far from complete. That is why we are once more recommending that appropriations for REA and RTB remain at their current levels for the coming fiscal year.

The loan level floors we are requesting are as follows: REA direct loans, $239,250,000; RTB direct loans, $177,045,000; REA guaranteed loans, $119,625,000; and RTB capitalization, $28,710,000.

To further ensure the successful operations of the programs, we are again asking the committee to endorse language that will continue the general funds prohibition and to address the sequence of loan draw-down provision, the full staffing request, and the conducting of audits issue.

Visionaries such as yourselves had ensured rural telephony is stronger than ever before. Rural telephone systems presently serve over five million subscribers and have contributed to the development of hundreds of thousands of jobs. In fact, rural telephone systems, alone, employ nearly 30,000 workers.

Unfortunately, these amazing successes have led some to question the necessity of maintaining the REA programs into the next century. I can assure you this doubt is unwarranted.

Over two million rural households remain without the availability of basic telephone service. Also, the Federal Government's objective of a universal telecommunications infrastructure and service at reasonable rates has not yet been fully achieved.

In addition, for rural communities to remain competitive with urban centers, telecommunications infrastructure must constantly be upgraded with new technology such as fiber optic systems and digital switching equipment. These wonders can bring the informa-

tion age into our homes. Unfortunately, it is doubtful much of this could be achieved without REA financing.

Meanwhile, people across the country are rediscovering rural America. As population, pollution, and the cost of living escalate in our urban centers, Americans are finding the nation's rural areas can offer unlimited resources, and our rural cooperative and commercial telephone companies are there enthusiastically responding to the demands of this renewed interest.

In the past, distance has discouraged extensive rural development, but today's telecommunications infrastructure is breaking down the distance barrier. These obstacles to rural development are now being overcome through local leadership and modest investment by the Federal Government in the form of REA/RTB loans.

Understanding the effectiveness of these rural development tools, we find the Administration's proposal to severely curtail the program's ability to function disturbing. NTCA and its members are not in a position to accept this philosophical change.

Finally, the Administration fails to acknowledge that the REA and RTB direct loan programs are revolving funds and, as such, do not require vast capital outlays by the Federal Government. Principal and interest payments are continually returning to the programs, but Administration accounting and budgeting methods do not reflect this return accurately.

In reality, the cost of the programs are minimal—especially in comparison with the benefits they provide. It is essential that the President and his team reevaluate their assessment of the future necessity of the REA and RTB telephone lending programs.

Understanding the severe budget constraints the subcommittee continues to operate under, we feel our appropriations request to simply freeze programs levels for the tenth consecutive year is responsible. We remain hopeful that you are in a position to accommodate this request.

Thank you for your time and your kind consideration of our request.

Mr. AKAKA. Thank you very much, Mr. Shelton.

Mrs. Smith?

Mrs. SMITH. We appreciate your being here. Thank you very much.

Mr. AKAKA. Mr. Myers?

Mr. MYERS. No questions. Thank you.

Mr. AKAKA. Mr. Skeen?

Mr. SKEEN. Well, Mr. Chairman, I have got to make a comment here. This is my friend and colleague from Artesia, New Mexico, that runs my telephone system.

Mrs. SMITH. You had better make a comment.

Mr. SKEEN. You bet. One thing about it: that telephone system works. Any time I call Robert he is there, or vice versa—I'm not there.

But I just want to say this: I am the last Member of Congress to ever have a telephone system installed in my home after I was elected. I live 17 miles from a paved road. Of course, I had a friend in Congress with me who is now Governor of New Hampshire who said there is no place in the United States 17 miles off of a paved

road. Well, that shows you how far we have gotten. But if it wasn't for the rural electrification system and the rural telephone system, many of us who live in rural America—real rural America—wouldn't have either service. We subscribe to the fact that we probably parallel the model under which the REA/RTB was organized because we barely make the one customer per mile, I believe.

Mr. SHELTON. I believe it is 1.3.

Mr. SKEEN. Only 1.3 customers per mile, and we like it that way.

Mr. MYERS. Did you get the telephone because you are in Congress or despite the fact that you are in Congress?

Mr. SKEEN. No, sir. They started this—when they found out I was leaving town they put the phone in. And I want to say that I have had no peace and quiet since we got the telephone in there, but I have had good service and I want to thank you all very much for it. Robert, you have done an outstanding job. That was a good statement. I think that you find a lot of agreement amongst those of us on this committee.

Mr. SHELTON. We hope so. We appreciate that.

Mr. AKAKA. Thank you for that fine statement.

[Mr. Shelton's prepared statement follows:]

TESTIMONY OF

ROBERT SHELTON, MANAGER

PENASCO VALLEY TELEPHONE COOPERATIVE, INC., ARTESIA, NEW MEXICO

ON BEHALF OF THE

NATIONAL TELEPHONE COOPERATIVE ASSOCIATION, WASHINGTON, DC

BEFORE THE

AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES

SUBCOMMITTEE ON APPROPRIATIONS

OF THE U. S. HOUSE OF REPRESENTATIVES

March 27, 1990
Washington, D. C.

Mr. Chairman, distinguished members of the committee, my name is Robert Shelton and I am the Manager of the Penasco Valley Telephone Cooperative, Inc., in Artesia, New Mexico. In addition to Penasco, today I am also appearing on behalf of the National Telephone Cooperative Association (NTCA) which represents nearly 500 small locally owned and operated rural cooperative and commercial telephone companies in over 40 states. Because Penasco and indeed the majority of NTCA members participate in the Rural Electrification Administration (REA) and Rural Telephone Bank (RTB) telephone lending programs, I appreciate this opportunity to review the ongoing necessity of these programs with you.

The REA/RTB telephone lending programs have played a vital role in developing the nation's rural telecommunications infrastructure. Despite rural telephony's great strides since the foundations of the REA telephone lending programs were first laid in 1949, our job is not yet complete. Continued funding of these programs will be necessary to meet the many challenges of tomorrow. That is why NTCA is once more recommending that appropriations for REA/RTB remain at their current levels for the coming fiscal year. To further ensure the successful operation of the programs, NTCA requests that the Committee once again include language in the appropriations bill and the accompanying report that continues the general funds prohibition and addresses the sequence of loan drawdown provision, the full staffing request and the conducting of audits issue.

Allow me to digress just a moment. Today, through the foresight of visionaries such as yourselves, rural telephony is stronger than ever before. Rural telephone systems presently serve over 5 million homes, schools, churches and commercial enterprises throughout the U.S. states, territories and commonwealths. In addition, rural telephone systems have helped start and expand thousands of new public and private projects. These efforts have produced hundreds of thousands of new jobs. In fact, rural telephone systems alone employ nearly 30,000 full-time workers.

Unfortunately, these amazing successes have led some to question the necessity of maintaining the REA/RTB telephone lending programs into the 21st century. As I have stated, Mr. Chairman, despite the telecommunications industry's outstanding progress in serving rural America, much remains to be done. And, this task cannot be accomplished without the REA/RTB telephone loan programs.

Recent U.S. Census Bureau data show that over 2 million rural households remain without even the most basic form of telephone service. In addition, in order for our rural communities to remain competitive with urban centers, telecommunications infrastructure must constantly be upgraded. Further, the federal government has long sought the implementation of universal telecommunications infrastructure and service. It can hardly be denied that the REA telephone lending programs are essential to achieving that policy objective.

Mr. Chairman, in recent years, much has been written about this "Information Age" we currently find ourselves in. Not surprisingly, the telecommunications industry is playing the leading role in bringing this "age" to Americans across the country. As the volume of information that is available to Americans grows, so too does the pace of technological advances for handling this material. In the 1980s, we observed the concept of fiber optic transmission evolve from dream to reality. Compared to older wire transmission infrastructure, the capabilities of fiber optic line appear almost limitless. In addition, switching capability has steadily evolved from a mechanical to a computerized digital nature. These "wonders" have brought the world to our homes and offices. Unfortunately, such advances do not come without cost.

Meanwhile, Americans have begun to rediscover rural America. In decades past, scores have left these peaceful havens for what was perceived to be more promising futures in terms of economic stability and quality of life. Yet as population, pollution and the cost of living escalate in our urban centers, this theory is being reexamined. The nation's rural areas offer unlimited resources to individuals, small businesses and corporations. Yet one problem has persistently stood in the way of economic development in rural areas -- distance.

Its never been a secret that distance is a rural region's greatest obstacle. Concurrently, its no secret that in today's hi-tech world these obstacles can be easily overcome through the use of advanced telecommunications infrastructure. In other words, telecommunications development can play a major role in determining the economic viability of the nation's rural communities. We have shining examples of this all across the country. Lands' End, Inc. was a small clothing retailer that moved to rural Dodgeville, Wisconsin in the early 1960s. Today, largely due to its 800 number communications link with the country, the company is a several hundred million dollar-a-year-business which has had an enormous economic impact on its surrounding rural community.

Not all rural development will or should be on this grand a scale. Cottage industries have sprung up around the country and they can utilize telecommunications links for data transmission or other projects. The point to keep in mind is that rural development is attainable and there are hundreds of examples of successful initiatives that were made possible largely through the development of local telecommunications infrastructure. Major obstacles can be overcome through local leadership and modest investment by the federal government (in the form of REA/RTB loans). Without REA, a majority of this development would be difficult to attain.

President Bush's first budget proposal which was released in early 1989 displayed a lack of appreciation for the value of the REA/RTB telephone loan programs. Though initially alarmed by his proposals, our industry's fears did, for a time, subside as the President steadily unveiled his rural conscience. First, the President ordered a critical review of the United States Department of Agriculture's (USDA) rural development programs. From this, recommendations for improving the programs' performance were developed. Later President Bush issued a white-paper outlining his thoughts on the rural agricultural sector. He also instructed his appointees within USDA to remain vigilant to the needs of all facets of the rural economy. In addition, President Bush endorsed a comprehensive plan formulated by his Economic Policy Council's Working Group on Rural Development. Finally, his Administration endorsed the concept of rural economic development and encouraged accomplishing it through enhancement of existing programs. Overall, the President appeared to embrace a genuine concern for rural America and its many needs and we expected bold new ideas and strong support for the REA/RTB telephone lending programs in FY 1991.

Imagine our disappointment to discover that the President's FY 1991 budget proposes to restructure the REA and RTB telephone lending programs in such a manner as to render these effective rural development tools virtually useless. Specifically the President proposes to: terminate the REA direct and guaranteed loan programs; prohibit further capitalization of the RTB; reduce annual RTB direct loan limits from $177 million to $125 million; increase the RTB direct loan rate to market level; initiate a new RTB 70% guarantee program; establish a sliding scale loan origination fee; reinstate the REA's restrictive general funds and loan draw down policies; and to clearly establish the objective of RTB privatization in 1995.

Mr. Chairman, as you can see, the Administration is proposing to abandon a time tested and financially stable direct loan revolving fund in favor of unworkable and ill-conceived alternatives. NTCA and its members are not in a position to accept such philosophical changes. Our rural areas are sparsely populated and the terrain often difficult to overcome. As the telecommunications industry continues to undergo vast change, new competitive forces are always evolving. These factors equate heavy costs. The capital that is necessary for rural telecommunications development often leaves many of our members with a questionable paper-equity, and commercial lenders generally will not lend in these situations -- especially with only a partial government guarantee.

Rural areas by way of their sparse populations remain costly to serve. Were these rural telephone companies forced to borrow exclusively from private sector lenders, the rural infrastructure could very well languish to the point where the differences between

rural and urban telephone service would appear similar to the disparity we knew in the 1950s.

The Administration also fails to understand that the REA/RTB direct loan programs are revolving funds and as such do not require vast capital outlays by the federal government. The only real cost associated with the programs are the relatively minor difference in the cost of interest to the government and the rate at which it is loaned to borrowers and of course those associated with the normal administration of the program. These costs are all Congressionally mandated. The Administration should acknowledge the fact that principal and interest payments are continually returning to the programs, but that government accounting and budgeting methods do not reflect this return accurately. This is simply playing with the numbers of a program the Administration probably does not wish to maintain. The real costs of the programs are minimal, especially in comparison with the benefits the programs provide.

Mr. Chairman, the very foundations of our country are rooted in rural policy. From the days of the Jeffersonian ideal that rural life is the source of all good in the American character through the present, national policy has been influenced to a degree by rural policy. We have worked so hard to ensure that America maintained its rural heritage and we must work equally hard in the future to ensure leaders of tomorrow do not overlook these regions as economic policies are developed.

Rural America can provide all Americans with a host of benefits, and making efficient use of its resources should be our highest priority. President Bush appears to have caught the spirit though it seems to conflict with other policies of his Administration. Specifically, the President recently broached the subject of telecommuting, where a person works from the home, utilizing the nation's telecommunications infrastructure to carry out their responsibilities. The President claims that by telecommuting, air pollution could be reduced, energy could be conserved and overall quality of life would improve for thousands of Americans. President Bush went on to laud the concept of telecommuting as a promising flexible workplace policy that employers should investigate.

In light of this endorsement and the need to bring the "Information Age" to rural America, NTCA would suggest that the President and his team reevaluate their assessment of the future necessity of the REA/RTB telephone lending programs. They are necessary, they are valuable and they are economically feasible.

In closing, let me simply reiterate NTCA's FY 1991 appropriations request which is as follows:

* REA direct loans -- $239,250,000;

* RTB direct loans -- $177,045,000;

* REA guarantees ---- $119,625,000;

* RTB capitalization - $28,710,000.

NTCA also requests that language on general funds, sequence of loan draw downs, full staffing and conducting of audits be included in the bill and report language.

Thank you for your time and your kind consideration of our requests!

TUESDAY, MARCH 27, 1990.

RURAL TELEPHONE PROGRAM

WITNESS

B. WAYNE CLARK, UNITED STATES TELEPHONE ASSOCIATION

Mr. AKAKA. Our next witness is Wayne Clark, United States Telephone Association.

Wayne, we welcome you to the committee. We look forward to your testimony. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

Mr. CLARK. Thank you, Mr. Chairman.

My name is Wayne Clark. I am President of Missouri Telephone Company and a member of the United States Telephone Association. I am presenting this testimony on behalf of USTA and the approximately 1,100 members of USTA and the customers that they serve.

Targeted assistance offered by a strong and viable REA is essential to maintain a healthy rural telephone industry that contributes to the provision of universal telephone service.

We appreciate the strong support that this committee has provided to the REA telephone loan program over the years, and we look forward to this continuing.

Based upon extensive member experience with the program, USTA recommends that the United States adopt the following for the continuation of the REA telephone loan program: maintain the fiscal year 1991 telephone loan program authorization at the fiscal year 1990 levels; continue the important task of fully capitalizing the rural telephone bank; set the REA administrative budget at a level to ensure sufficient personnel and equipment; continue the Congressional prohibition on REA general funds restrictions; continue the Congressional prohibition on REA which prevents regulation of the sequence of advance of loan funds; encourage REA to stimulate investments in new technologies through modification of its dividend policy; and, finally, to ensure that financing is provided to achieve all Act purposes.

As you know, rural utilities generally have higher costs and need more capital per customer than their urban counterparts to meet universal service obligations. Rural customers demand and deserve facilities that will provide a quality of service that is equivalent to that received by urban customers, and to provide this service REA borrowers need to invest in new technology.

Just as technology is rapidly changing, the regulatory structure is, as well. Local customers must shoulder a greater share of telephone network expenses now as a result of some of these regulatory changes.

The REA telephone program targets assistance to rural customers in two ways. First of all, it lends for the extension and improvement of facilities. Second, the relatively low cost of these funds enables rural telephone systems to counter unusually high cost of service. After all, offering service at rates which make that service

unaffordable for an average household is, in effect, the same as having no service at all.

The REA program is a unique, voluntary, public and private partnership that directly benefits rural people. Telephone companies and cooperatives act as conduits for service benefits between the Federal Government and rural customers—REA's intended beneficiaries.

The Government's contribution is leveraged by the equity, the management expertise, and the dedication of local telephone systems.

The REA dividend policy unreasonably restricts the amount of dividends that borrowers can pay to stockholders. The policy leads to over-capitalization of borrowers, which unnecessarily increases their revenue requirements and, therefore, customer rates.

The policy also severely restricts the amount of its own funds which a borrower may invest in telecommunications projects such as cellular mobile radio and other rural development projects. Congress should require that REA modify its dividend policy consistent with loan security.

Last year REA published regulations which increased borrower eligibility requirements for receiving a loan and reduced the benefits which flow to rural customers. Most notable: provisions increasing the financial test to qualify for a loan, and refusing to lend for the construction of particular types of telephone plant which are permitted by the Rural Electrification Act. These policies should be eliminated.

Good telephone service is essential to America's rural foundations and yields enormous returns to the national economy by stimulating production, reducing the trade deficit, generating additional tax revenues, and increasing employment.

Now, when many rural areas need modern telecommunications to stimulate needed economic development, REA is more necessary than ever.

REA can be the model rural development program it was envisioned to be. Congress should authorize adequate loan levels, encourage REA to abandon policies that improperly limit the benefit of the REA program, and, most importantly, to retain the essential partnership between Government and telephone companies and consumers.

We thank you again, Mr. Chairman and subcommittee, for allowing us to present this testimony.

Mr. AKAKA. Thank you very much for your testimony.

Mrs. Smith?

Mrs. SMITH. Thank you. We appreciate your being here.

Mr. CLARK. Thank you.

Mr. AKAKA. Mr. Myers?

Mr. MYERS. No questions.

Mr. AKAKA. Thank you very much, Mr. Clark.

[Mr. Clark's prepared statement follows:]

TESTIMONY

OF

B. WAYNE CLARK

PRESIDENT OF

MISSOURI TELEPHONE COMPANY

ON BEHALF OF THE

UNITED STATES TELEPHONE ASSOCIATION

SUBMITTED TO THE

RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

SUBCOMMITTEE ON APPROPRIATIONS

OF THE

UNITED STATES HOUSE OF REPRESENTATIVES

Opening Remarks

Mr. Chairman and Members of the Subcommittee, I am B. Wayne Clark, President of Missouri Telephone Company. I appear before you as a representative of the United States Telephone Association (USTA). USTA represents about 1100 local telephone companies that provide telecommunications services to over 98 percent of the access lines in the United States. USTA members range from large publicly-held corporations to small family-owned companies and cooperatives owned by their customers. I present this testimony in the interests of the members of USTA and the customers they serve.

Local telephone companies are dedicated to fulfilling two goals: serving the nation's telecommunications needs and maintaining universal service at reasonable rates. USTA members, both large and small, firmly believe that the targeted assistance offered by a strong and viable Rural Electrification Administration (REA) is essential in order to maintain a healthy and growing rural telephone industry that contributes to the provision of universal telephone service. We appreciate the strong support this committee has provided for the REA telephone program since its inception in 1949 and look forward to a vigorous REA program for the future.

Recommendations

USTA recommends the following for the continuation of a strong REA Telephone Program:

1. Maintain the fiscal year 1991 telephone loan program authorization at the same levels approved for fiscal year 1990:

REA Insured Loans	$239,250,000 - $311,025,000
Rural Telephone Bank Loans	$177,045,000 - $210,540,000
REA Loan Guarantees	$119,625,000 - $138,765,000

2. Continue the important task of fully capitalizing the Rural Telephone Bank (RTB);

3. Set the REA administrative budget at a level to ensure that adequate personnel and equipment are available to perform its statutory functions;

4. Continue to prohibit REA general funds restrictions;

5. Continue to prohibit REA from regulating the sequence of advance of loan funds;

6. Encourage REA to stimulate investment in new technologies through modification of its dividend policy;

7. Ensure that financing is provided to achieve all statutory purposes.

We understand the budget constraints Congress must face, but the Administration's fiscal year 1991 budget for REA threatens our ability to adequately serve the nation's telecommunications needs and to maintain universal service. The Administration's budget proposals for the REA telephone programs would change REA from an effective rural development program to one of little or no benefit to rural telephone customers. For FY 1991 the Administration proposes to eliminate all insured and 100 percent

guaranteed loans and substitute 70 percent guarantees of privately originated loans. In addition, it once again proposes to dramatically increase RTB interest rates in order to accelerate the schedule for Bank privatization. USTA opposes these proposals.

A Changing Industry

The telephone industry is undergoing dramatic change. Both the technological underpinnings and the regulatory atmosphere are much different than they were just a few years ago. Any type of change, whether positive or negative, can create dislocations in the economy. Now is not the time to weaken a program that helps rural Americans cope with current changes in the telecommunications industry and prepare for the next century.

Utilities are capital intensive. This is particularly true of rural telephony. All utilities need to invest large sums of capital to extend service, modernize plant and provide new services. Rural utilities generally have higher costs and need more capital to meet their universal service obligations.

The majority of REA borrowers' switching offices still have mechanical step-by-step technology. Rural telephone systems will need to update their switching offices to continue the present level of telephone service and to provide the new services that urban customers will soon enjoy. Maintenance of the old step-by-step offices is becoming more expensive and parts are getting scarce.

In the last 10 to 15 years, most REA borrowers have upgraded to one-party service by installing buried cable and other equipment. Whether the new technology is digital switching, signalling system seven or lightwave transmission, rural customers demand and deserve facilities that provide a quality of service that is equivalent to that received by urban customers. Rural economies require this to remain viable.

Just as technology is rapidly changing, so is the regulatory structure of telecommunications. Local residential customers now shoulder a greater share of telephone network expenses. The REA telephone program targets assistance to rural telephone customers. It keeps them on the network by allowing for reasonable phone bills and extends and expands that network in rural America to meet the future needs of these customers.

Given the technological necessity to update switching centers and to replace outside plant, along with the stress of coping with regulatory changes, maintaining REA lending at 1989 authorized levels is essential for the preservation of universal service. The job of serving rural areas requires continuing commitment; it is certainly not finished.

The chairman of the FCC recently explained the importance of deploying new technologies to rural areas and voiced support for continued REA lending for the development of rural telecommunications networks. USTA shares his view and hopes Congress will reject Administration budget proposals for REA which would severely limit the deployment of new technologies in rural areas.

The REA Telephone Loan Program Aids Rural Development

Good telephone service is an essential part of rural America's infrastructure,

and yields enormous returns to the national economy. It helps expand production, both agricultural and non-agricultural; reduce the trade deficit, generate additional Federal, state and local tax revenues, and stimulate employment. Now, when many rural areas require a modern telecommunications infrastructure to stimulate needed economic development, REA is needed more than ever.

The REA telephone program has never had a default in its 35 year history. Fully funded and properly administered, it can be a model rural development program. If anything, the REA program should be expanded, not reduced.

REA Helps Rural Americans

There is little argument that good, dependable telephone service is a necessity of modern life. Without the REA program, telephone service quality in rural areas could deteriorate. The telephone amendments to the Rural Electrification Act and REA standards ensure that good telephone service is provided to the "widest practicable number of rural users" in each borrower's service area.

The REA program assures the availability of telephone service in two ways. First, it provides the necessary capital to fund the extension and improvement of facilities. Second, the relatively low cost of that capital enables rural telephone systems to counter inherently high costs of service. After all, offering service at rates which made that service unaffordable is, in effect, the same as having no service at all.

The REA telephone program directly benefits rural customers. Telephone companies and cooperatives act as conduits for service benefits from the federal government to rural telephone customers, who are the intended beneficiaries of the REA program. The REA program is a unique voluntary public/private partnership that benefits rural people. The government's contribution is leveraged by the equity, management expertise and dedication of local telephone companies and cooperatives.

REA Policies Frustrate Congressional Intent

In the last year, REA promulgated regulations which significantly increase the eligibility requirements for receiving a loan and reduce the benefits which Congress intends rural residents to receive. Included were provisions: increasing the financial tests which must be met to qualify for a loan; shortening the repayment period for loans from 35 years to the average capital recovery period of the assets financed; refusing to lend for certain purposes that are permitted by the Rural Electrification Act; and altering policies which serve to restrict eligibility for loans. Any policies that contravene the intent of Congress by reducing or restricting the benefits of the program should be eliminated.

Completion of Full Capitalization of the Rural Telephone Bank (RTB)

Through its adoption of an interest rate formula for the Rural Telephone Bank, Congress recognized the value of the government purchase of Class A stock in the Bank. The formula specifically referred to the stock as a component of the calculation of the interest rate and was structured to ensure that the stock was purchased promptly. The Class A stock serves the dual purposes of allowing the Bank to lend at below market rates and infusing capital into the Bank, thus enabling it to fulfill its role as a substantial supplemental source of funding for telephone borrowers. The full

capitalization of the Rural Telephone Bank should be completed as authorized under present law.

REA's Mortgage Restrictions on Dividends are Unreasonable

REA unreasonably restricts the amount of dividends which borrowers are allowed to pay to stockholders. Overcapitalization of these telephone companies increases the earnings base of the company and results in higher customer rates. These restrictions limit the investments a borrower may make with its own funds in telecommunications projects such as cellular radio and other rural development projects. Congress should require that REA modify its mortgage restriction on dividends consistent with loan security.

REA Should Continue to be Prohibited from Imposing General Funds Restrictions and Regulating the Sequence of Advance of Loan Funds

Early in the 1980s, REA's restrictions on loans and advances based on a borrower's level of general funds almost destroyed the REA program, as these restrictions excluded three quarters of all borrowers from the program. The initiative of this committee and the subsequent action of Congress prohibited REA from relying on these restrictions. Customers were again able to receive the full benefit of the REA program. We hope and recommend that the general funds prohibition be included in the fiscal year 1991 appropriations bill.

REA's policy that required advance of certain funds before other funds resulted in higher costs to subscribers and/or deferral of planned construction to improve service. By prohibiting this policy Congress has ensured that the intended benefits of the program are realized. We urge that the prohibition on regulating the sequence of advance of funds be included in the fiscal year 1991 appropriations bill.

Provide Adequate Staffing and Funding for Administering the Program

The Administration's budget proposes to reduce the staffing level from 550 at the end of calendar year 1989 to 531 for fiscal year 1991. The telephone staff's share of this reduction will adversely impact REA 's ability to administer the program. REA's engineering staff develops standards and specifications for telecommunications equipment and technological design and application of innovations for rural areas. The REA management staff is responsible for monitoring the security of over $7 billion in advanced loan funds. Adequate staffing and an adequate administrative budget is essential for an effective REA telephone program, now and in the future.

Conclusion

Congress will assure the effective operation of this worthy and necessary program by continuing to authorize adequate loan levels, by encouraging REA to abandon policies and proposals which inhibit the benefits of the REA program from reaching rural America, and most importantly, by retaining the worthwhile partnership between REA, telephone companies and customers.

Thank you again for this opportunity to present our views concerning this vital program.

TUESDAY, MARCH 27, 1990.

RURAL TELEPHONE PROGRAM

WITNESS

LOUISE P. BROWN, ORGANIZATION FOR THE PROTECTION AND ADVANCEMENT OF SMALL TELEPHONE COMPANIES

Mr. AKAKA. Our next witness is Louise P. Brown, Organization for the Protection and Advancement of Small Telephone Companies.

We welcome you to the committee. We look forward to your testimony. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

You may proceed.

Ms. BROWN. Thank you.

I am Louise Brown. I am President of the Loretto Telephone Company in South-central Tennessee. I am also on the board of directors of OPASTCO, which is the Organization for the Perpetuation of Small Telephone Companies. We have about 420 members, and none of the members can exceed 50,000 stations. They serve approximately 1.75 million telephone subscribers in 40 States in rural America. Of those, 70 percent have REA and RTB loans.

A lot of what I was prepared to say has been said very ably from people who testified before me, but could I paint you a little picture?

In 1946 my husband and I bought a little telephone company at Loretto. We had 120 magneto telephones. In January an ice storm took down every line we had. There was one phone working on Sunday morning. We had one child at the time. Ten days after the ice storm our second child was born. The town helped us and we rebuilt our telephone company.

Seven years and six babies later we were still struggling along when REA came to call. We didn't have enough area. So, with their advice, we bought one or two other neighboring exchanges and applied for an REA loan. Frankly, we were just scared to death to borrow that kind of money but we knew we had to do something. We had to provide service because our people didn't have service outside the little township. There were no phones.

So we applied and the REA field people were wonderful. They stood by us all the way, and they continue to do that. Their staff has been cut recently, and really regrettably so. I hope that it can be beefed back up and not cut any more.

But I made the actual survey. I put all these kids in the station wagon and I drove all over the back roads to talk to my people and see if they were interested in the telephone and signed them up. All we were offering was eight-party rural lines.

I detect that some of you maybe have lived out in the country. I certainly hope you have, because that is probably the only way that you could understand where I am coming from. But those people were tickled to death to think about getting an eight-party line. There were mothers out there on farms with kids that get hurt and they need to call a doctor.

So we applied for our first loan and we built eight-party rural lines. Since then we have upgraded to four-party lines, we have upgraded to all one-party lines. We have had to replace offices. We are serving now 4,500 customers in our exchanges and we employ 30 people. We pay well. The Government has had the benefit of all of this economic stream that all of these rural companies have generated.

I am not an isolated example. When I talk to my OPASTCO friends they say, "Louise, you sound like you are telling my story." This is a universal story.

Had we not had REA financing I don't think that kind of telephone service would be available yet to the rural people.

There are some people that seem to think that the job is done, but it is far from done because there are so many new advances in technologies on a day-to-day basis that we have got to keep up with if we expect to keep our companies and keep serving the rural people.

Our Tennessee Commission is very determined that we will offer the latest state-of-the-art service to our rural areas in Tennessee.

If I had to go borrow money at bank rates and couldn't get the REA interest rate, I would find it very difficult to be able to continue to put in digital offices and put in the data links and fibers and all of those latest things that people seem to demand today.

Now, I have very little business or industry in my area. Believe it or not, my principal business is a casket factory. But if I can't provide them with data links someone else might, and then the rates would become higher for my rural people in their residence. I think this is what all of you, as well as ourselves, are wanting to avoid.

I think the country is the best place to live. We want to stay there, and we want to entice and encourage other people to stay there by being able to provide business and industry to keep our young people there and to keep the urban burdens from being any heavier, too.

I believe that I detected a sympathetic strain among all of you for our REA programs, but I maintain that we need them more than ever as we face modern technology and the needs of today. I would hate for anything to be cut or be adversely affected or more burdensome for the REA borrowers. I feel like we will continue to need the REA program for years and years to come.

I want to thank all of you for your past support and encourage you to think about people like myself. I am mother to 12 children all together, and sometimes I liken us rural people to the good child. It seems to get a pat on the head and get passed over, but we certainly hope that even though we have done a good job you are still going to know that we have needs out there—unique needs—and that they are still there and we need our REA program for the telephone industry.

Thank you very much.

Mr. AKAKA. Thank you very much, Ms. Brown. I want to commend you. You have quite a story to tell about your children and your husband. You have certainly carried this in a successful way, and we appreciate your support of REA.

Ms. BROWN. Thank you.

Mr. AKAKA. I want to commend you for the kind of service you have given in this area.

Ms. BROWN. Thank you.

Mr. AKAKA. Thank you very much for your testimony, Ms. Brown.

[Ms. Brown's prepared statement follows:]

Statement of
Louise P. Brown
President, Loretto Telephone Company
Board Member, Organization for the Protection and
Advancement of Small Telephone Companies
before the
Rural Development, Agriculture, and
and Related Agencies Subcommittee on Appropriations
U.S. House of Representatives

March 27, 1990

Good morning Mr. Chairman and members of the subcommittee. I appreciate this opportunity to appear before you to discuss the fiscal year 1991 budget proposed for the Rural Electrification Administration.

I am Louise Brown, president of Loretto Telephone Company in Loretto, Tennessee, and also a member of the board of directors of OPASTCO, the Organization for the Protection and Advancement of Small Telephone Companies.

OPASTCO is a national association representing more than 420 small telephone companies and cooperatives that serve less than 50,000 customers. Collectively our members provide telephone service to approximately 1.75 million subscribers in 40 states in rural America. Of our members, 70 percent are REA or RTB borrowers.

You have said in that past that the REA program is a program for the people. My customers and those of other small telephone systems are those people, and we need REA to continue to be there for us now more than ever before. The continuation of a strong REA program is vital to rural America. Loan levels must be maintained for the REA, RTB, and FFB programs and there must be continued capitalization for the Rural Telephone Bank. The administration's proposal to eliminate the insured and FFB guaranteed programs and substitute the RTB as the guarantor of a new 70 percent guaranteed loan program cannot be accepted.

My company, Loretto Telephone Company, currently has approximately 4,500 access lines serving 4 exchanges in southern middle Tennessee. But when we purchased the company back in 1946, it had only 124 access lines. I operated the switchboard in our home and my husband served as the outside plant man. We went through some rough times, including an ice storm just months after we purchased the company which took every one of our customers out of service.

Seven years and six babies later we were scraping along when the REA field reps first came to call and explain the REA program. Since that time, we have had 6 REA and 3 RTB loans to help us do everything from replacing old open wire, to converting to touchtone, to installing digital switches, to extending service from those 124 original customers to all parts of Lawrence County,

Tennessee. I can honestly say that without REA financing and technical assistance, our company could not have achieved the level of facilities and service quality we have today. REA helped us manage and plan; they were with us every step of the way.

I realize that some people, including the administration, believe that the REA's job is for the most part complete and that telephone companies serving rural areas are able to obtain financing from private sources. But I strongly disagree. Telephone service is widely available in rural America, but that service needs to be continually modernized, and REA financing is needed.

Having come through the industry changes resulting from divestiture and facing the growth in fiber optics, the advent of signaling system 7, integrated services digital network, and much much more, I believe many of the largest and hardest jobs lie ahead. I see a greater need for REA and its programs than ever before.

We have entered a time when advanced services beyond basic voice service are becoming an expected and needed part of our customers' telecommunications service. To bring the information age to rural America -- including fiber optics, advanced signaling networks and the services these technologies will provide -- telephone companies serving rural areas must continue to receive and make efficient use of REA funds.

My company currently is applying for an REA loan to convert the remainder of our offices to digital. We are planning and look forward to providing new advanced services to our customers, and I also might point out that our very progressive public service commission in Tennessee is insisting that telcos in the state keep their networks state of the art.

Without continued REA support as technology, competition, deregulation, and new services develop, we will likely see a widening gap between rural and urban telecommunications services and the development of what many have referred to as information services "haves" and "have nots." Also, without the credit assistance provided by REA, the rates paid by rural subscribers would increase significantly.

But the implications of needing information services extend beyond the current population in rural areas -- telecommunications plays a crucial role in rural development, an issue which is of great importance to all of us today. Rural America needs more job opportunities and economic growth, and telecommunications is an integral component of such development. To keep its citizens, rural America must have jobs, and to attract businesses, rural America must have the telecommunications services these businesses desire. And this should be an issue of concern not only to rural representatives but to urban congressmen as well, for unless the rural areas can attract and keep people and businesses, the

highways and other urban infrastructure components will continue to be pushed to their limits.

Many REA borrowers have taken a role in economic development as local business leaders. But without REA funding support, many local telephone companies will not be able to make their most important contribution to rural economic development -- that is, modern telecommunications services.

Sufficient funding must be maintained not only for the REA lending programs but also for adequate staffing of the agency. The number of REA staff years has dropped significantly in recent years, and this continued decrease reduces the services REA provides to rural Americans through its borrower telephone companies.

When my husband died in 1969, I was left to manage our telephone company alone. The information we had learned from the REA accountants and field reps was invaluable to me, and their continued guidance and support helped Loretto make it through that time of great change.

The services REA provides in addition to funding, such as establishing standards, conducting field trials, and approving materials, are essential to small telephone companies. We already have seen a decline in support in recent years, and this shortage will be even more detrimental in the months and years ahead as new technology such as signaling system 7 continues to develop and bring new services and applications.

In the 1960s, REA led in adapting technology to the rural environment, saving money and improving service. If small companies today are to provide the services which customers want and which could foster economic development in rural areas, they must have expertise in the new technologies and know how to employ them efficiently. REA support is needed to meet this end.

In addition to the proposed cuts in funding levels and decreases in staff and support services, I also am concerned about several other administration plans for REA.

The one percent loan origination fee, which would increase to 3 percent by 1995, is an unnecessary burden for borrowers. The REA states that this additional charge is to be deposited in the revolving fund and used to offset administrative and default costs. Such a provision would increase rural subscribers' rates and is particularly questionable because, to my knowledge, there never has been a default on a telephone loan.

The administration also proposes to significantly increase the RTB interest rate, and this too would increase borrowers' costs of providing service and in turn increase local rates.

Additionally, the administration seeks to reinstate its general funds policy and to regulate the order in which borrowers with more than one loan draw down their funds. Such provisions are unnecessary impediments to loan approvals and advances and should not be permitted.

REA is one of the great achievements of our government; it is an excellent program which continues to serve rural America well. It is not a grant program -- the loans are paid back in full -- and the yearly net outlay by the government is insignificant.

The citizens of rural America need the REA program. I urge the subcommittee to reject the administration's proposals and to maintain current lending levels for a healthy REA program. We appreciate the subcommittee's past efforts in support of REA and look forward to working with you to create a strong future for REA. Thank you.

TUESDAY, MARCH 27, 1990.

REA

WITNESS

WALTER "PETE" RECKINGER, III, SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC.

Mr. AKAKA. Our next witness is Walter "Pete" Reckinger, III, Sheet Metal & Air Conditioning Contractors National Association, Inc.

Thank you very much. We look forward to your testimony. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

You may proceed.

Mr. RECKINGER. Thank you, sir.

Good afternoon to you and to the members of the subcommittee. I am Pete Reckinger, and I am Vice President of Reckinger Heating and Cooling Company located in Deerborne, Michigan.

I welcome and appreciate this opportunity to appear before you to present the Sheet Metal and Air Conditioning Contractors' comments and recommendations on the fiscal year 1991 Rural Electrification Administration budget and the REA program.

SMACNA comments also reflect the views of the Alliance for Fair Competition—AFC—which is a national coalition represented by more than 30 trade associations, labor organizations, and other small business groups. I currently serve as chairman of the alliance.

My oral presentation today will be an abbreviated version of SMACNA's written statement, which has already been provided.

I want to begin by expressing SMACNA's opposition to the Department of Agriculture's low interest loan program for the Rural Electrification Administration, and I urge your support for the Administration's REA reform proposal.

SMACNA opposes the use of low-interest Federal loans to rural electrical cooperatives which result in funding unfair utility competition with small businesses. Below-market pricing, financing, and sales and markets traditionally served by small businesses is a direct and harmful result of the Federal REA loan assistance program.

SMACNA believes that RECs should be subsidized only with regard to the energy generation and distribution needs of rural areas. The REA should not be subsidizing cooperatives' unrelated business ventures competing with private business.

REA officials acknowledge that REA borrowers are in sound financial condition. They do not need massive Federal subsidies to survive. When Federal funds must be used by the REA and RECs, safeguards should be attached to the loan funds to prevent unfair competition with small businesses.

Due to the REA loan program, the special 501(c)(12) tax status of cooperatives, marketing ability, and financial resources, RECs have a Government-subsidized advantage over private businesses—especially in the heating, ventilating, and air conditioning market.

The REA was authorized in 1936 to make loans and guarantee loans to expand electrification and telephone services into distant and rural areas. It was not the intent of Congress to create an administration as a competitor of suburban and rural small businesses.

In recent years only a small fraction of the 5 percent REA loans approved since 1976 have been used to service truly rural areas. That emphasizes the outdated nature of the program. REA borrowers are providing energy systems service, programs traditionally offered by small businesses, in suburban and vacation areas such as Vail, Aspen, Hilton Head, and Orlando, as an example.

In 1989 the Small Business Administration issued a major report entitled Competition Between Small Businesses and Rural Electrical and Telephone Cooperatives in Non-Utility Businesses. According to the report, only seven States have authority to regulate diversification into small business markets or anti-competitive practices by cooperatives. They found that "the diversification of cooperatives and regulated utilities into non-utility businesses has significant implications to competition in unregulated markets, particularly the effect of this diversification on the ability of certain small businesses to survive."

The list of non-utility business ventures documented in the SBA study include: appliance sales and services, heating and air conditioning services, and a long list of cable and electric product sales and services with hundreds of different products and services for sale and installation.

SBA further reported: "Competition with monopoly utilities in non-utility market can result in destruction of small business competitors who do not have the low-cost financing, marketing advantages, and special tax treatment."

While SMACNA members and other small businesses do not fear tough competition, cooperatives enter the marketplace with competitive advantages not based upon business market efficiency but on government subsidies.

A detailed case from Missouri is included in SMACNA's written statement for your review. You will easily see from the Missouri example a cooperative cannot be beaten when it enters the marketplace with the Federal Government as a partner bankrolling its ventures.

The following are SMACNA's recommendations:

First, consistent with the need for Federal budget reductions, SMACNA urges your support for the Administration's fiscal year 1991 budget proposal to reduce and phase out the overall REA loan subsidies program.

Second, Congress should develop and implement major reforms for the entire REA assistance program following those outlined in H.R. 1232. H.R. 1232 limits the geographic areas receiving REA loans to rural areas in markets not adequately served by other small businesses.

Third, the REA should immediately request an audit and a small business impact statement of all cooperative borrowers with non-utility businesses to determine the extent of subsidization between utility and non-utility activities.

Fourth, the FTC should be directed to investigate and issue a report on the anti-competitive practices common in REC marketing, sales, service, installation, and advertising efforts.

Fifth, Congress should amend the tax laws pertaining to the nonutility ventures of RECs to require that the IRS fairly tax unregulated REC business income as it does small business income.

Finally, Congress should mandate State public service commission review of REC activities before REA assistance or other related REA benefits could flow to that particular State.

The opportunity to reform and update the REA loan program is before Congress. The Administration's proposal provides for substantial budget savings and competitive benefits to the small business community.

In the last two weeks, as a part of H.R. 3581, the Rural Economic Development Act, the House passed a number of amendments without opposition to improve the climate for small business in rural areas. By accepting the Administration's proposal and by passing additional REA reforms, Congress can send an even stronger message to the small business community that the free market is recovering in rural America.

Thank you.

Mr. AKAKA. Thank you very much, Mr. Reckinger, for your testimony. We thank you, also, for your recommendations.

Mr. RECKINGER. You are welcome.

[Mr. Reckinger's prepared statement follows:]

The Sheet Metal and Air Conditioning Contractors' National Association, Inc.

Statement
of
The Sheet Metal and Air Conditioning Contractors' National Association, Inc.
on
FY91 Appropriations for the Rural Electrification Administration (REA)
before
The House Appropriations Committee
Subcommittee on Rural Development, Agriculture and Related Agencies

March, 1990

SMACNA is an International Trade Association representing 5,000 contributing contractors engaged in the fields of heating, air conditioning, air pollution control, solar energy installation, architectural sheet metal and other metal applications.

The sheet metal contracting industry exceeds $10 billion annually.

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LOW INTEREST LOAN PROGRAM FOR THE RURAL ELECTRIFICATION ADMINISTRATION

On behalf of the Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA), representing more than 5,000 construction firms, I want to express our opposition to the Department of Agriculture's low interest loan program for the Rural Electrification Administration (REA). I urge your support for the Administration's REA reform proposal for FY91.

SMACNA opposes the use of low interest federal loans to Rural Electric Cooperatives (RECs) which result in funding unfair utility competition with small businesses. Below market pricing, financing and sales in markets traditionally served by small businesses is a direct and harmful result of the federal REA Loan Assistance Program.

SMACNA believes that REA should be subsidized only with regard to the energy generation and distribution needs of rural areas. The REA should not be subsidizing unrelated rec business ventures competing with private businesses. Further, the REA should be self financing rather than depending on massive federal subsides to survive. However, when federal funds are used by the REA and RECs, safeguards should be attached to the loan funds to prevent unfair competition with small businesses. Due to the REA loan program, the special 501(C)12) tax status of RECs, marketing ability and financial resources, RECs have a government subsidized advantage over private businesses, especially in the heating, ventilating and air conditioning market.

While similar anti-competitive practices by utilities are generally regulated by federal government agencies (Security and Exchange Commission (SEC), Federal Trade Commission (FTC), Department of Energy (DOE)) and state public service commissions, most RECs are unregulated at the state or federal levels. Due to the escalating level of anti-competitive practices by RECs in suburban and urban areas, SMACNA supports full scale reform of the REA subsidy program beginning with the proposal put forth by the Administration for FY91.

HISTORICAL PERSPECTIVE

The REA was established in its permanent form in 1936 (7 U.S.C. 901-950(C)12). The REA was authorized to make loans and guarantee loans to expand electrification and telephone service into distant and rural areas. REA was also given the authority to make grants and loans for the purpose of promoting rural economic development and job creation projects. It was not the intent of Congress in 1936 to create the REA as a competitor or a predator of suburban and rural small businesses. The Treasury provides the financing to the REA and the REA loans the funds to RECs at five percent interest, with a maximum amortization period of 35 years. REA also furnishes, without cost to the borrower, regular and frequent business management and technical services. Over the past 15 years the value of REA subsidies has amounted to $50 billion. With 99 percent of all rural residents now receiving electric services and private sector loan sources abundantly available, this program represents one of the governments most unnecessary and wasteful loan and loan guarantee programs. To worsen the federal deficit the Rural Electrification and Telephone Revolving Fund has been exempted by the REA Act of 1936 as amended, from paying annual interest costs owed the Treasury on loan advances totaling $7.9 billion. It is a luxury expenditure the federal government can not afford and one that unfairly penalizes small business.

The fact that REA reported, in recent years, that only a small fraction of the five percent REA loans approved since 1976 have been used to service truly rural areas emphasizes the outdated nature of the program. To illustrate the extent of the problem, REA borrowers are providing energy system service programs traditionally offered by small businesses in suburban areas near Dallas, Washington, D.C., Atlanta, Minneapolis/St. Paul, New Orleans and St. Louis to name a few. Vacation areas also receive anti-competitive, subsidized service programs from REA borrowers, including Vail and Aspen Colorado, Hilton Head, South Carolina, and Orlando, Florida. The Administration's proposal to cut the loan fund to $200 million for REC's that can not borrow from private sources is a step in the right direction. The proposal would provide 90 percent REA guarantees of power supply loans and 70 percent guarantees of electric distribution loans made by the private sector. This is a fair method to prevent "withdrawal shock" for RECs living on generous REA loans at terms unavailable to small business. A gradual phase-out of the loan and guarantee program should give REA and RECs a reasonable period of time to become efficient businesses, operating under standard business practices and regulations.

Unfair competition from public utilities is not new on the Congressional agenda. There has been a number of hearings on the harm to small business by ratepayer subsidized utility programs in recent years. The federal government and many states have since passed laws preventing cross subsidized, below market financing, pricing, service and installation programs by utilities to provide a fair competitive market for small businesses. California, Wisconsin and Iowa were the leaders in passing such law.

In response to widespread complaints by the small business community, over unfair REC competition, the previous Administration and numerous state public service commissions sought termination of the REA loan program, reduction in funding and regulatory reform of REA programs. In September 1988, the Administration stated in a letter to Congress that "The Administration objects strongly to continuing the highly subsidized REA direct loan lending program....The Administration's budget includes a number of long overdue reforms that would convert the costly five percent loans to REA guarantees of private loans." The Administration in the same letter voiced objections to a $325 million appropriation for interest subsidies and losses in the REA loan program. Unfortunately, Congress and various state legislatures have preserved the heavily subsidized and generally unregulated environment for electric cooperatives. It is now time for Congress to act.

To address this issue SMACNA was a co-founder five years ago of the National Alliance for Fair Competition (AFC) a coalition of more than thirty national and state associations and organizations fighting anti-competitive practices by utility RECs at the state level. However, in the last few years the protest against unfair practices by RECs has reached beyond state capitals to the top of the agendas of numerous trade and labor associations, SMACNA being one of them.

SBA SUPPORTS REFORM

In 1989 the Small Business Administration (SBA) issued a major report entitled, **Competition Between Small Businesses and Rural Electric and Telephone Cooperatives in Non-Utility Business**. Enclosed is a copy of the report for the hearing record. According to the SBA report, only seven states have authority to regulate diversification into small business markets or anti-competitive practices by RECs. The SBA also found that "the diversification of cooperatives and regulated utilities into non-utility businesses has

significant implications to the competition in the unregulated markets, particularly the effect of this diversification on the ability of certain small businesses to survive".

The list of recent business ventures documented in the SBA study, include non-utility areas such as natural gas, marketing and sales, satellite dishes and equipment, cable TV, appliance sales and services, customer surveillance equipment, 2-way radio, telephone business systems, cellular phones, computer equipment, and heating and air conditioning services. Within these categories of REC operations are hundreds of different products and services for sale and installation.

SBA further reported, "Competition with monopoly utilities in the non-utility market can result in the destruction of small business competitors who do not have the low cost financing, management talents, marketing advantages and special tax treatment." While SMACNA members and other small businesses do not fear tough competition, the new REC entrance into our marketplace have competitive advantages not based upon business or market efficiency but on government subsidies.

A CASE EXAMPLE

In the fall of last year in the State of Missouri a number of manufacturers and hundreds of small businesses complained to their state and national leaders, the FTC, and their trade associations over a new aggressive REC venture into the heating and air conditioning sales and installation market. The specific system promoted by RECs involved ground source heat pumps which are expensive and labor intensive to install.

Within a few months of the REC advertising blitz of incredibly low prices, large rebates, five percent financing over seven years and unheard of give-away incentives, contractors reported business drop-offs exceeding twenty percent. Employee layoffs, cut-backs in hours and a general feeling of contractor desperation engulfed the area from St. Louis to Columbia. A small business coalition was formed and Missouri's U.S. Senators and Representatives were contacted, as was the Missouri Public Service Commission and the FTC. The responses to the Coalition were the same--no one had control or authority over the REC in question.

An example of the REC's bid for a Missouri Ground Source Heat Pump (GSHP) is as follows:

3 Ton GSHP		5 TON GSHP
$1,120.95	GSHP	$1,612.26
$1,375.05	Complete Installation	$1,687.74
$2,500	Selling price - Financed For 7 years, 5% interest	$3,300
$-1,050.00	Rebate	$-1,750.00
$1,450.00	Final Cost to Homeowner	$1,550.00

This example excludes mark-up on mechanical systems but includes:

- Ground water wells drilled at no charge
- Charges representing only material costs of ground pipe, electrical materials and air handling duct changes
- REC employees used for installation

Since a small business person must be profitable to stay in business, must pay wages to installers, pay workmen's compensation and many other mandated benefits, liability insurance, advertising, sales tax and income tax he cannot compete with an REC on this project or other similar projects. The same system would have a fair market cost to the homeowner if installed by a private business of: 1) 3 ton--$4,000-$4,300 2) 5 ton--$5,200-$5,600.

As one can easily understand from this common example, the REC cannot be beaten when it enters the marketplace with the federal government as a partner bankrolling its ventures.

Another issue raised by the Missouri situation is the propriety of the REC campaign to switch new customers to electric heating and cooling systems and to increase the electric usage of current customers. While contractors in Missouri offer all types of systems manufactured by various companies, the RECs are promoting electric systems by one manufacturer with deep discounts and subsidies to make the sale. This is a problem the Agriculture and the Energy Committees in Congress should examine.

SMACNA'S RECOMMENDATIONS FOR REA REFORM

1. Due to the overwhelming need for federal budget reductions, SMACNA urges your support for the Administration's FY91 budget proposal to reduce and phase-out the overall REA loan subsidies program. The REC network is large and financially strong--it needs to stand on its own with private capital.

2. To remedy the unfair competitive advantages of cooperatives against non-subsidized, tax paying small businesses, Congress should develop and implement major reforms for the entire REA assistance program. These reforms could follow those outlined in H.R. 1232, a bipartisan bill currently before the Agriculture Committee, which severely limits the geographic areas receiving REA loans to rural areas in markets not adequately served by other small businesses.

3. To further restrict unfair competition, the REA should immediately request an audit of all cooperative borrowers with non-utility businesses to determine the extent of cross subsidization between utility and non-utility activities. A small business impact statement should also be required of each REA borrower to be reviewed by the General Accounting Office on an annual basis.

4. The FTC should be directed to investigate and issue a report on the anti-competitive practices common in REC marketing, sales, service, installation and advertising efforts. Guidelines for review of the anti-competitive activities of RECs should be recommended to the nation's Governors and the Public Utility Commission in every state where the REA is involved.

5. Congress should amend the tax laws pertaining to the non-utility ventures of RECs to require that the IRS fairly tax unrelated REC business income as it does small business income. Congress received such recommendations from the Comptroller General in 1983 in a report entitled, "**Legislation Needed to Improve Administration of Tax Exemption Provisions For Rural Cooperatives**", but failed to act on them. These tax changes would better recognize the vast changes in electric cooperatives' operations, activities and income sources since the generous REC tax exemption policy was established in 1924.

6. Congress should provide leadership to the states that do not have public service commission authority to regulate rural electric cooperatives. Congress should mandate that public service commission review of REC activities be a requirement before REA assistance or other related REA benefits could flow to a particular state.

CONCLUSION

The opportunity to reform and update the REA Loan Program is before Congress. The Administration's proposal provides for substantial budget savings and competitive benefits to the small business community. Less than two weeks ago on March 15 as part of H.R. 3581, the Rural Economic Development Act, the House passed an amendment without opposition to improve the climate for small business in rural areas. By accepting the Administration's proposal and by passing additional REA reforms, Congress can send an even stronger message to the small business community that the free market is on its way to recovery in rural America.

Mr. AKAKA. We are going to recess for about seven minutes. We will be right back.

We stand in recess.

[Recess.]

Mr. AKAKA. The subcommittee will come to order.

TUESDAY, MARCH 27, 1990.

FOREIGN CURRENCY RESEARCH PROGRAM

WITNESS

C.W. KAUFFMAN, THE UNIVERSITY OF MICHIGAN

Mr. AKAKA. Our next witness will be Doctor Kauffman from the University of Michigan.

Doctor Kauffman, we accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. We welcome you to this hearing. You may proceed.

Mr. KAUFFMAN. Good afternoon. I am Bill Kauffman from the Department of Aerospace Engineering at the University of Michigan. I am pleased that this distinguished subcommittee has allowed me to appear before them.

My appearance here today is in support of the foreign currency research program of the United States Department of Agriculture Office of International Cooperation and Development. Perhaps it may seem strange to the subcommittee that an aerospace engineer is a cooperating scientist on an active foreign agricultural research grant, but, as I will explain, I believe that it demonstrates the diversity of the research in agriculture receiving support through the foreign currency research program.

My work, as it relates to agriculture, is concerned with explosion science—a sudden release of energy as a result of a combustion process resulting in gaseous matter of reduced density with the production of high pressures and high flow velocities. In the science of flight such controlled processes are useful in that they provide propulsive forces.

In a semi-controlled fashion, the sudden release of energy can be used for military purposes; however, when the processes are totally uncontrolled accidental disasters result which are highly visible.

The same aerospace knowledge may also be applied to the development of an understanding of dust explosions, which have accompanied the development of industrial technology in, for instance, mining, food, and chemical industries.

A particularly devastating series of explosions occurred in the grain storage and handling facilities during Christmas week of 1977, which focused considerable attention on the dust explosion problem in the U.S. agricultural industry. As a result of this experience, the National Academy of Sciences appointed a panel of safety experts, of which this author was a member, in order to establish the causes and to recommend preventative action so that these disastrous events could be eliminated.

It might be noted that the experience of Christmas week, 1977, has not yet been repeated.

My presence here today is a result of my research interests, their application to a specific agricultural safety problem, and a gracious 20 November, 1989, meeting with Mr. Bob Foster of the subcommittee staff who suggested that I provide public testimony before the subcommittee regarding my benefit involvement in and the benefits to the United States of the foreign currency research program.

The foreign currency research project with which I am involved is one of the 22 that are currently active in the newly democratic nation of Poland. A listing of all of the Polish projects, as well as the other nations, are included in the booklet which I have provided to Mr. Foster for distribution.

The grant is supervised and partially conducted by the Warsaw Institute of Technology. The U.S. Department of Agriculture is providing $250,000 equivalent in the foreign currency, zlotys, over five years for this research, with Poland contributing $75,000 equivalent, which is in addition to the time of the project scientists.

Also assisting the university in this work is the Institute of Aviation in Warsaw and the Experimental Mine Barbara in Katowice.

The scientists and facilities that are being applied to obtain an understanding of the dust explosion process under this project are first class. The scientists have long established themselves worldwide in the field of explosions and, through the use of the galleries at the Mine Barbara, full-scale dust explosion tests may be conducted giving accurate simulation of events in actual grain elevator accidents.

Because of the relative economic conditions, such full- scale tests can only be afforded in Poland, although the U.S. Bureau of Mines does have a similar experimental mine.

In order to maintain the strict relevance of these results to the U.S. grain industry, ten metric tons of Midwestern United States corn dust was kindly supplied by Mid- States Terminals of Saginaw, Michigan, and shipped to Poland for this research in the fall of 1989.

As the United States cooperating scientist for the Department of Agriculture, my role in this research is to assure that the Polish efforts support our own domestic dust explosion research efforts, and that the results of this are made available for the prevention of U.S. agricultural dust explosions.

As you have heard, Poland has been referred to as the crossroads of Europe as a result of their fortunate or unfortunate geographical location. For centuries, other nations going east/west or north/south have passed through Poland. As such, the Poles have had contact with which, until recently, had been referred to as the East and to as the West. As such, Poland is a national meeting ground, and, consequently, Soviet and American explosion scientists have been brought together as a result of Polish hospitality.

The Soviets have also had grain elevator and mill explosions, which were for the first time openly discussed at the Second International Colloquium on Dust Explosions in Jadwisin, Poland, in 1986. The Soviet explosion scientists expressed considerable interests in sharing their results and in joining in the common effort for the elimination of these needless and devastating events.

As a result of the subsequent scientific interaction in the United States, the Soviet Union, and Poland, the Soviet Ministry of Grain

Products—now represented by the Russian Ministry—has presented to the U.S. Department of Agriculture a yet to be acted on proposal relating to cooperative efforts in agricultural explosion safety.

Not only does this proposed program offer some exciting scientific prospects, but it also offers significant opportunities relating to commercial development in the general agricultural area. For example, in July and September, 1989, certain Soviet officials were introduced to the product Jiffy Mix. They have deemed that this product has considerable consumer appeal, and they have indicated that they would desire to initiate negotiations such that this product would be available to Soviet citizens. I would hope that their initiative would receive the favorable response of the U.S. Government.

Up to this point in my testimony I have been able to give the subcommittee positive results concerning the foreign currency research program. Now I must deliver some bad news. The foreign currency research program has been deleted from President Bush's fiscal year 1991 budget. And, over the past five years, the budget for this program has been continually reduced from $5 million to $3 million to $1.5 million to $1 million and, in fiscal year 1990, Congress provided $850,000.

As a scientist, I can indicate to you the value of this program. The scientific research conducted through the sponsorship of the foreign currency research program in my own area of expertise, dust explosions, as well as in other diverse agricultural subject areas such as germplasm collection, dry land agriculture, forestry, aquaculture, acid rain, food safety, and biological control of animal and plant pests has contributed significantly to the storehouse of useful knowledge. Indeed, considering all of the countries and all of the research programs beyond Poland, the subject areas and the research results truly become enormous.

It is necessary for one to consider the special importance of these scientific activities in that, because of the lack of unique research facilities, the innate presence or absence of local flora and fauna, the existence of local environmental conditions, and the imposition of financial constraints, that it is not possible to conduct this research within the United States.

In Poland the research projects which are selected for funding reflect the priorities of the Joint Council on Food and Agricultural Services and the Users Advisory Board. This cost-effective program has been in place for 30 years, and it does have a proven record of providing new scientific information in the agricultural sciences. These detailed publications are available at Beltsville.

It should be obvious, because of the increasing world population, as well as the newly-liberated peoples and their demand for higher standards of living, the increasing price of energy, and the degradation and changing of the environment, that we continually require new scientific information if we are to assure the future competitive position of the U.S. agriculture in the world marketplace. It is my personal observation that agriculture and aviation are two industries in which our nation is still economically strong.

Since the foreign currencies utilized under this program are the direct result of public law 480 agricultural commodity sales, it

makes good sense to reinvest a portion of the money realized from these sales for the benefit of U.S. agriculture. In these foreign countries it continues to be one of our few economic shoes in the door.

I can personally report to the subcommittee that I encounter considerably more speakers of Japanese and German in the hotel lobbies of Moscow and Warsaw than I do those of English. The one-on-one relations between the investigating scientist and the cooperating scientist is a significant attribute for U.S. economic interests, and I would suggest that these contacts be exploited fully. The salespeople in the hotel lobbies must expend considerable effort to develop such meaningful contacts, but they eventually will.

The health and wellbeing of the Polish academic and scientific communities have certainly been impacted and will continue to be affected by the foreign currency research program. During the long period of Socialism/Communism, this program allowed some of the members of these communities to maintain contacts with the West, and this certainly provided encouragement and motivation during those dark nights.

As a result of the policies of the previous system, many young Poles, who normally would have chosen an academic or scientific career path, have either emigrated abroad or chosen the life of a worker. The economic and political future of the new democratic Poland certainly requires strong academic and scientific institutions and an attractiveness of these institutions to the younger members of the population.

The support of research in these institutions by the foreign currency research program certainly assists in the achievement of this goal. It is clear that there is a positive sentiment in the United States to assist Poland in their democratic transition, as there is with regard to other nations in similar circumstances. The Office of International Cooperation and Development already possesses an existing infrastructure that can provide immediate assistance having considerable leveraged benefit to the economic and political wellbeing of the Polish nation, and subsequently benefit the long-term interests of the United States.

It should be noted that because of the numerous benefits which I have previously enumerated I would strongly urge the subcommittee that they substantially fund the foreign currency research program, considering that tangible results will actually be delivered. This is not a charity program. It, perhaps, would be appropriate for the subcommittee to consider restoration of the budget at one of the previous levels of $5 million to be used to purchase U.S.-owned foreign currencies. Considering the funding requirements for the existing grants and those that have already been approved contingent upon funding availability, this is an accurate requirement.

I, indeed, do appreciate the patience of the subcommittee in receiving my testimony. If you have any questions I would be pleased to attempt to provide you with answers, drawing upon my knowledge that I have gained from my ten visits to Poland and five to the Soviet Union regarding explosion science.

Thank you very much for your kind attention and interest.

Mr. AKAKA. Thank you for your testimony, Doctor Kauffman. We appreciate your candor and certainly will consider your request. Thank you very much.

[Dr. Kauffman's prepared statement follows:]

Statement of

C. WILLIAM KAUFFMAN, Ph.D.

Associate Professor
Department of Aerospace Engineering
The University of Michigan
Ann Arbor, Michigan 48109

Before the

Rural Development, Agriculture, and Related
Agencies Subcommittee on Appropriations
Committee on Appropriations
House of Representatives
Representative Jamie L. Whitten, Chairman

27 March 1990

Good afternoon. I am Bill Kauffman, from the Department of Aerospace Engineering at The University of Michigan. I am pleased that the distinguished Subcommittee has allowed me to appear before them.

My appearance here today is in support of the Foreign Currency Research Program of the United States Department of Agriculture, Office of International Cooperation and Development. Perhaps, it may seem strange to the Subcommittee that an aerospace engineer is a cooperating scientist in an active foreign agricultural research grant, but as I will explain, I believe that it demonstrates the diversity of research in agriculture receiving support through the Foreign Currency Research Program.

My work as it relates to agriculture is concerned with explosion science. A sudden release of energy as a result of a combustion process results in gaseous matter of reduced density with the production of high pressures and high flow velocities. In the science of flight, such controlled processes are useful, in that they provide propulsive forces. In a semi-controlled fashion, this sudden release of energy can be used for military purposes. However, when the processes are totally uncontrolled, accidental disasters result, which are highly visible. This same aerospace knowledge may also be applied to the development of an understanding of dust explosions, which have accompanied the development of industrial technology in, for instance, the mining, food, and chemical industries. A particularly devastating series of explosions occurred in grain storage and handling facilities during Christmas week of 1977 which focused considerable attention on the dust explosion problems in the U. S. agricultural industry. As a result of this experience, the National Academy of Sciences appointed a panel of safety experts, of which this author was a member, in order to establish the causes and to recommend preventative action so that these disastrous events could be eliminated. I might note that the experience of Christmas week of 1977 has yet to be repeated.

My presence here today is a result of my research interests, their application to a specific agricultural safety problem, and a gracious 20 November 1989 meeting with Mr. Robert Foster, of the Subcommittee Staff, who suggested that I provide public testimony before the Subcommittee regarding my involvement in and the benefits to the United States of the Foreign Currency Research Program.

The Foreign Currency Research Project with which I am involved is one of the twenty-two that are currently active in the newly democratic nation of Poland (A listing of all Polish projects, as well as those in the seven other nations, can be found in the USDA publication, "Active Foreign Agricultural Research Grants," IRD-OD-1011). The grant is supervised and partially conducted by the Warsaw Institute of Technology. The USDA is providing a total of $250,000 equivalent in foreign currency, zlotys, over five years for this research, with Poland contributing $75,000 equivalent, which is in addition to the time of the project scientists. Also, assisting The University in this work, is the Institute of Aeration in Warsaw and the Experimental Mine Barbara in Katowice. The scientists and the facilities that are being applied to obtain an understanding of the dust explosion process under this project are first class. The scientists have long established themselves worldwide in the field of explosions and through the use of the galleries at the Mine Barbara (Saint Barbara being the patron of miners) full-scale dust explosion tests may be conducted giving accurate simulation of the events in an actual grain elevator accident. Because of relative economic conditions, such full-scale tests can only be afforded in Poland, although the U. S. Bureau of Mines does have a similar experimental mine. In order to maintain the strict relevance of these results to the U. S. grain industry, 10 metric tons of midwestern United States corn dust was kindly supplied by Mid-States Terminals of Saginaw, Michigan, and shipped to Poland for this research project in the Fall, 1989. As the United States cooperating scientist for the Department of Agriculture, my role in this research is to assure that the Polish effort supports our own domestic dust explosion research efforts, and that the results of this research are made available for the prevention of U. S. agricultural dust explosions.

As you have heard, Poland has been referred to as the crossroads of Europe, as a result of their fortunate or unfortunate geographical location. For centuries, other nations going east/west or north/south have passed through Poland. As such, the Poles have had contact with which until recently, had been referred to as the East and to as the West. As such, Poland is a national meeting ground and consequently Soviet and American explosion scientists have been brought together as a result of Polish hospitality. The Soviets have also had grain elevator and mill explosions, which were for the first time openly discussed at the Second International Colloquium on Dust Explosions, Jadwisin, Poland, November 1986. The Soviet explosion scientists expressed considerable interest in sharing their results and joining in a common effort for the elimination of these needlessness and devastating events. As a result of subsequent scientific interaction in the United States, the Soviet Union, Poland, the Soviet Ministry of Grain Products (now represented by the Russian Ministry of Grain Products) has presented to the U. S. Department of Agriculture, a yet to be acted on proposal relating to cooperative efforts in agricultural explosion safety. Not only does this proposed program offer some exciting scientific prospects, but it also offers significant opportunities relating to commercial development in general agricultural areas. For example, in July and September 1989, certain Soviet officials were introduced to the product "Jiffy Mix." They have deemed that this product has considerable consumer appeal, and they have indicated that they would desire to initiate negotiations such that this product would be available to Soviet citizens. I would hope that their initiative would receive the favorable response of the U. S. Government.

Up to this point in my testimony, I have been able to give the Subcommittee positive results concerning the Foreign Currency Research Program. Now, I must deliver some bad news. The Foreign Currency Research Program has been deleted from President Bush's Fiscal Year 1991 Budget. And, over the past five years, the budget for this program has been continually reduced from $5 million to $3 million, to $1.5 million, to $1 million, and in Fiscal Year 1990, Congress provided $850,000.

As a scientist, I can indicate to you the value of this program. The scientific research conducted through the sponsorship of the Foreign Currency Research Program in my own area of expertise, dust explosions, as well as in other diverse agricultural subject areas, such as germplasm collection, dry land agriculture, forestry, aquaculture, acid rain, food safety, and biological control of animal and plant pests has contributed significantly to the storehouse of useful knowledge. Indeed, considering all of the countries and all of the research programs beyond Poland, the subject areas and the research results truly become enormous. It is necessary for one to consider the special importance of these scientific activities in that because of the lack of unique research facilities, the innate presence or absence of local flora and fauna, the existence of local environmental conditions, and the imposition of financial constraints, that it is not possible to conduct this research within the United States.

In Poland, the research projects which are selected for funding reflect the priorities of the Joint Council on Food and Agricultural Services and the Users Advisory Board. This cost-effective program has been in place for thirty years, and it does have a proven record of providing new scientific information in the agricultural sciences (the publications are available through the National Agricultural Library, Beltsville, Maryland). It should be obvious, because of the increasing world population as well as the newly liberated peoples and their demand for higher standards of living, the increasing price of energy and the degradation and changing of the environment, that we continually require new scientific information if we are to assure the future competitive position of the U. S. agriculture in the world marketplace (It is my observation that agriculture and aviation are two industries in which our nation is still economically strong). Since the foreign currencies utilized under this program are the direct result of Public Law 480 agricultural commodity sales, it makes good sense to reinvest a portion of the money realized from these sales for the the benefit of U.S. agriculture. In these foreign countries, it continues to be one of our few economic shoes in the door. I can personally report to the Subcommittee that I encounter considerably more speakers of Japanese and German in the hotel lobbies of Warsaw and Moscow than I do those of English. The one-on-one relations between the investigating scientist and the cooperating scientist is a significant attribute for U. S. economic interests, and I would suggest that these contacts be exploited fully. The salespeople in the hotel lobbies must expend considerable effort to develop such meaningful contacts, but they eventually will.

The health and well-being of the Polish academic and scientific communities have certainly been impacted, and will continue to be affected by the Foreign Currency Research Program. During the long period of Socialism/Communism, this program allowed some of the members of these communities to maintain contacts with the West and this certainly provided encouragement and motivation during those dark nights. As a result of the policies of the previous system, many young Poles, who normally would have chosen an academic or scientific career path, have either emigrated abroad or chosen the life of a worker. The economic and political future of the new democratic Poland certainly requires strong academic and scientific institutions, and an

attractiveness of these institutions to the younger members of the population. The support of research in these institutions by the Foreign Currency Research Program certainly assists in the achievement of this goal. It is clear that there is a positive sentiment in the United States to assist Poland in their democratic transition, as there is with regard to other nations in similar circumstances. The Office of International Cooperation and Development already possesses an existing infrastructure that can provide immediate assistance having considerable leveraged benefit to the economic and political well-being of the Polish nation and subsequently benefit the long term interests the United States.

It should be noted that because of the numerous benefits which I have previously enumerated, I would strongly urge the Subcommittee that they substantially fund the Foreign Currency Research Program, considering that tangible results will actually be delivered. This is no charity program! It, perhaps, would be appropriate for the Subcommittee to consider restoration of the budget at one of the previous levels of $5 million to be used to purchase U. S. owned foreign currencies. Considering the funding requirements for the existing grants and those that have already been approved contingent upon funding availability, this is an accurate requirement.

I, indeed, do appreciate the patience of the Subcommittee in receiving my testimony. If you have any questions, I would be pleased to attempt to provide you with answers drawing upon the knowledge that I have gained from my ten visits to Poland and five to the Soviet Union regarding explosion science. Thank you for your kind attention and interest.

TUESDAY, MARCH 27, 1990.

EXPORT DEVELOPMENT

WITNESSES

CHARLES OTTEM, U.S. AGRICULTURAL EXPORT DEVELOPMENT COUNCIL
NELSON DENLINGER, U.S. AGRICULTURAL EXPORT DEVELOPMENT COUNCIL

Mr. AKAKA. Our next witnesses will be Charles Ottem and Nelson Denlinger of the U.S. Agricultural Export Development Council.

Gentlemen, we are happy to have you. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

Please proceed at your pace. If you can, summarize your statement. We are happy to have you.

Mr. OTTEM. Thank you, Mr. Chairman.

My name is Charles Ottem. I am a farmer from Osnabrock, North Dakota. I presently serve as Secretary of the U.S. Feed Grains Council, an export market development organization. I have submitted written testimony which you allude to having which deals with all programs affecting U.S. agricultural exports. I will limit my oral testimony to those programs that we see needing change and why.

Mr. AKAKA. Thank you very much.

Mr. OTTEM. I appreciate the opportunity to testify on behalf of the U.S. Agricultural Export Development Council, a group of 72 nonprofit, producer and agribusiness organizations of which the U.S. Feed Grains Council is a member.

USAEDC members represent the best in public/private cooperation. Utilizing public funds and programs available through the USDA Foreign Agricultural Service, coupled with funds from member organizations, USAEDC member efforts have resulted in expanded sales of a variety of U.S. agricultural commodities all over the globe.

Agricultural exports last year had a value of nearly $40 billion. The agricultural trade surplus in 1989 was over $17 billion. I don't know of any other industry in this country that can boast of such a major, positive contribution to the trade balance of the United States.

But the agricultural export recovery of the past several years seems to be leveling off. We must maintain our export and market development programs for agriculture to continue and increase this positive contribution to the U.S. trade picture. This is not the time to cut back on U.S. market development efforts and export programs. We need to maintain an aggressive stance. We are looking at a time of opportunity for U.S. agricultural exports. With the economic and political changes taking place around the world, such as in Eastern Europe and in Asia, it is evident that the United States must be committed to an aggressive stance on agricultural exports.

USAEDC believes that the international programs administered by the Foreign Agricultural Service are vital to allow U.S. agricul-

tural producers to compete in the world marketplace. There is no doubt that these programs have been successful.

FAS has a talented network of agricultural counsellors, attaches, and trade officers who provide a wealth of important information for U.S. exporters. Information on foreign supply and demand, macro economic developments, and policy changes helps U.S. exporters maximize their opportunities.

In recent years the FAS presence overseas has been threatened by rising costs. This comes at a time when global changes mean an even greater need for information for U.S. exporters. We believe there is a need for more counsellors to be dispatched, and especially to those markets the U.S. has been unable to enter.

The market development cooperator program, in which USAEDC members participate, is a permanent program within the FAS budget. It represents a long-term commitment to promotion of U.S. products and market expansion in foreign nations. The work done through FAS is vital to U.S. agriculture. We urge the subcommittee to recommend at least $115 million be appropriated to FAS as the minimum amount necessary to administer its programs in fiscal year 1991.

A number of other programs contribute to the success of the FAS cooperator partnership. The targeted export assistance—or TEA program—has enhanced the success of the cooperator program. TEA has proven to be a valuable market-opening tool because it increased the scope of market development activities and the number of organizations eligible for assistance.

We support authorization in fiscal year 1991 for $325 million. We will request that the TEA program be reauthorized in the 1990 farm legislation at the level indicated in the 1985 Farm Bill.

FAS administers a wide variety of export programs that promote foreign consumption of U.S. products. The GSM-102 export credit guarantee programs help stimulate U.S. exports by making available bank financing to foreign purchasers on credit terms up to three years.

In fiscal year 1989, $4.95 billion in guarantees were announced, and so far in fiscal year 1990 USDA has announced $4.2 billion in short-term guarantees.

We anticipate increased requests for credits and recommend an increase of at least $1.5 billion in the funding for the GSM-102 program for fiscal year 1991. We urge this subcommittee to reject the proposed $5 billion cap on the GSM-102 program in the fiscal year 1991 budget.

The export enhancement program was created in the 1985 Farm Bill to help regain agricultural exports lost in the early 1980s and to offset the adverse effects of unfair trade practices.

As a barley producer—which I am, from North Dakota— this program has been successful reaching markets previously closed to U.S. barley. Those markets were closed because of highly-subsidized foreign competition. We recommend that the EEP program be funded at the $1 billion level.

The United States has the tools it needs to be competitive in world markets, but we need to reaffirm our commitment to the goal of competitiveness and fund our existing programs at maximum efficiency. We cannot afford to miss opportunities. We need

the commitment from Congress that the fruits of our labor will be available to the world at competitive prices.

USAEDC respectfully urges this subcommittee to make USDA's export programs its highest priority. Let us use this experience and work together to make the 1990s fulfilling and prosperous for U.S. agriculture.

Thank you, Mr. Chairman. I would be happy to answer any questions at this time that you may have.

Mr. AKAKA. Thank you very much, Mr. Ottem. I have no questions, but I want to thank you for your recommendations here. The committee will certainly consider them.

Mr. OTTEM. Thank you very much.

Mr. AKAKA. Thank you.

[Mr. Ottem's prepared statement follows:]

TESTIMONY OF THE
U.S. AGRICULTURAL EXPORT DEVELOPMENT COUNCIL
TO THE
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE & RELATED AGENCIES
COMMITTEE ON APPROPRIATIONS
U.S. HOUSE OF REPRESENTATIVES
March 27, 1990

Mr. Chairman, my name is Charles Ottem, I am a farmer from Osnabrock, North Dakota and I appreciate the opportunity to appear before you and this subcommittee to discuss the important role of U.S. agricultural exports. I am here on behalf of the U.S. Agricultural Export Development Council (USAEDC), a group of 72 non-profit, producer and agribusiness organizations. Our shared goal is to develop overseas demand for U.S. agricultural products. We are proud to say that the dedicated efforts of the USAEDC members have resulted in expanded sales of a variety of U.S. agricultural commodities to all regions of the world. My testimony today will focus on the U.S. Department of Agriculture's international programs as administered by the Foreign Agricultural Service.

Fiscal Year 1990 U.S. agricultural exports are forecast to decline to $38 billion, a $1.7 billion drop from the year before. Lower prices for most grains and oilseeds largely account for what is expected to be the first decrease in export value since fiscal year 1986. Export volume is expected to remain close to fiscal year 1989 levels. Happily, U.S. agricultural imports are forecast to drop to $21 billion reflecting a trade surplus of $17 billion. This figure is down only slightly from fiscal year 1989.

The export recovery of the last several years seems to be leveling off. This is generally due to the combination of a pervasive drought in the mid-West, falling commodity prices, and plentiful agricultural production elsewhere. The increasing possibility for a normal crop year next year underscores the need for the U.S. to remain committed to an aggressive export stance.

Also, we should add that the world has changed quite dramatically since the last round of appropriations considerations. The fall of Communism in Eastern Europe signals a need for a bold U.S. response. The people of the newly-democratizing nations are literally starved for the variety of foods the U.S. can provide to them. The potential is limitless for market development in Eastern Europe. It is already quite clear that our competitors are ready to provide whatever is necessary to these new governments. Will the U.S. be satisfied to stay on the sidelines? Can we honestly afford to?

Against the backdrop of international changes, the U.S. Congress is scheduled to complete farm legislation in 1990. When that is complete, there may be an agricultural trade agreement among the GATT participants which the Congress will also have to consider. 1990 is going to be a very busy year. It will also be a year of choices. The President and Secretary Yeutter have already indicated that our financial resources are limited. A rededication to a strong agricultural export policy should be our highest priority. We simply must be prepared to meet the challenge presented to us.

The Foreign Agricultural Service

USAEDC believes the the international programs as administered by the USDA's Foreign Agricultural Serice (FAS) are immensely important in assisting U.S. agricultural producers to compete in the world marketplace. There is no doubt that these programs have been successful.

Since its inception in 1954, long-term market development activity has been the core function of the Foreign Agricultural Service. This is a tremendous job. The FAS has a talented network of agricultural counselors, attaches and trade officers who provide a wealth of important information upon which U.S. exporters make export sales and marketing decisions. These overseas staff are responsible for providing not only foreign supply and demand information, but also news of macroeconomic developments, policy changes, and the more subtle changes in tastes and preferences. These intelligence efforts help maximize U.S. export opportunities.

In recent years, the FAS presence overseas has been threatened by rising costs. This is especially unfortunate in light of the dramatic political changes currently underway throughout the world. We believe there is a need for more counselors to be dispatched to identify opportunities for U.S. agricultural products, particularly in those markets which have hitherto been closed to U.S. exports.

The Washington-based staff of FAS is also very important. These people help to formulate the Department of Agriculture's international trade policies and programs with the goal of maintaining and expanding markets for U.S. agricultural products. The FAS monitors compliance with bilateral and multilateral trade agreements. It identifies barriers to trade and works with the office of the U.S. Trade Representative to remove them. At present, FAS is quite involved in the final months of negotiations within the Uruguay Round. If there is an agreement to liberalize trade, FAS's limited personnel resources will be further taxed.

As you can see, the work done by FAS is vital to U.S. agriculture. We urge the subcommittee to recommend that at least $115 million be appropriated to FAS as the minimum amount necessary to undertake the administration of its assigned programs in FY 1991 which are so important in helping U.S. producers compete in world markets.

Market Development Activities

Over the years, the private-sector and FAS have forged a successful partnership to expand U.S. agricultural exports. The Market Development Cooperator program is a permanent program to fund basic market development and trade servicing activities. Its goal is more long-term than many of the other programs administered by the FAS, although it also seeks to promote U.S. products and to expand market share in foreign nations.

One program that has enhanced the success of the FAS cooperator program is the Targeted Export Assistance (TEA) program. It is a child of the 1985 Farm Bill's competitiveness push. It was designed to assist exports of products adversely affected by the unfair trade practices of competitor and other nations. TEA has proven to be a particularly valuable market-opening tool because it has increased the scope of market development activities and the number of organizations eligible for assistance. TEA is a unique union of the public and private sector which identifies mutually beneficial trade and development projects, improves the effectiveness of U.S. food assistance and export programs, provides the groundwork for improved export market opportunities, and lays the foundation for a long-term coordinated trade and development strategy.

In fiscal year 1990, TEA was funded at $200 million and 46 organizations were eligible to participate. We support authorization in FY91 at $325 million. We will request that the TEA program be reauthorized in 1990 farm legislation at the level indicated in the 1985 farm bill.

Other Export Programs

In addition, the FAS administers a wide variety of export programs that promote the foreign consumption of U.S. products. The GSM-102 Export Credit Guarantee Program helps stimulate U.S. exports by assuring the availability of bank financing to foreign purchasers on credit terms of up to three years. The program operates when credit is necessary to increase or maintain U.S. exports to a foreign market. In FY89, $4.95 billion in guarantees were announced for 26 countries. So far in FY 90, USDA has announced $4.2 billion in short-term guarantees. We expect the demand for such credits to increase next year in light of the dramatic changes underway in Eastern Europe.

We recommend an increase of at least $1.5 billion in funding for the GSM-102 (6 months - 3 years) program for fiscal year 1991. We further recommend that the proposal in the FY 1991 budget to cap the GSM-102 program at the $5 billion level be rejected by this sub-committee.

The GSM-103 (3 - 10 years) Intermediate Export Credit Guarantee Program provides guarantees on commercial credit with repayment terms of four to ten years. This program is designed to help developing countries make the transition from concessional to cash sales. While the annual funding level of $500 million is currently adequate to meet demand, the changing world situation may necessitate increases.

The 1985 Farm Bill sought to strengthen FAS's export promotion activities in the face of unfair trade practices. The Export Enhancement Program was created to help regain agricultural markets lost in the early 1980s and is often used in conjunction with short-term credits. The EEP uses Commodity Credit Corporation commodities to make U.S. products more competitive in the world marketplace and to offset the adverse effects of unfair trade practices or subsidies. Under the EEP, agricultural commodities owned by the CCC are made available as a bonus to U.S. exporters to expand farm sales into targeted markets.

We continue to recommend that the EEP be funded at the $1 billion level.

While high-income countries have traditionally been the most important markets for U.S. agriculture, the PL-480 or Food for Peace program has set an excellent record in promoting the sale of farm goods to the developing nations of the world, In the past two decades, these lesser developed countries have emerged at the U.S.' largest aggregate agricultural export market. The PL-480 program allows us to maintain a generous humanitarian food, fiber and shelter aid commitment, while continuing to promote the use of U.S. products. USAEDC would like to see the program become more market-oriented in its approach, although we are, for the most part, quite satisfied with the operation and funding of the program.

Conclusion

We believe that the U.S. currently has the tools it needs to remain competitive in world agricultural markets. Why then, did U.S. agricultural exports turn down in fiscal year 1989? We need to reaffirm our commitment to the goal of competitiveness and to fund our existing programs to maximum efficiency. Let's not miss any of the opportunities to improve the well-being of U.S. agriculture. We at USAEDC are ready to meet the challenges ahead of us. But we cannot work alone. Admittedly, we need the intelligence and expertise of the Foreign Agricultural Service to help us identify our market opportunities. And we need the commitment from Congress that the fruits of our labors will be available at competitive prices to the world.

USAEDC respectfully urges this subcommittee to make USDA's export programs its highest priority. The U.S. is on a threshold of a new decade. We learned a lot from the experiences of the 1980s. Let's use that experience and work together to make the 1990s fulfilling and prosperous for U.S. agriculture.

TUESDAY, MARCH 27, 1990.

FEDERAL CROP INSURANCE

WITNESSES

RICHARD C. GIBSON, AMERICAN ASSOCIATION OF CROP INSURERS
JOHN JOYCE
PAUL FRISKOPP

Mr. AKAKA. We will move on to Richard C. Gibson, American Association of Crop Insurers.

Welcome, Mr. Gibson. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

You may proceed.

Mr. GIBSON. Thank you. We will summarize.

Mr. Chairman and members of this subcommittee, thank you for the opportunity to be here today and present our views on crop insurance program needs for the 1991 fiscal year. I am Richard Gibson, Chairman of the Board of Directors of the American Association of Crop Insurers; and also President of American Agrisurance, Inc., of Council Bluffs, Iowa. Accompanying me today is John Joyce and Paul Friskopp, who are also AACI members. AACI's membership writes about 70 percent of all multiple peril crop insurance and represents both reinsured companies and master marketers. Over 2,000 agents and adjusters are also members of AACI.

Mr. Chairman, in 1989 our industry had the opportunity to provide about $13 billion worth of MPCI production to about 800,000 policyholders, covering over 50 percent of the eligible acres in the United States. This was about double the 1988 business record. The timely handling and processing of the greatly-expanded business was possible only because the workload was handled by more than 13,000 independent agents and adjusters as opposed to the pre-1980 law when everything was done through multiple-county offices.

Of course, some of this tremendous increase in business was due to lingering effects of the 1988 drought, the requirement to purchase crop insurance in the disaster act, or a requirement by a lender. But we believe that the vast majority of this new and continued business was a result of the increased awareness about crop insurance and the marketing efforts of the private insurance industry.

We are very proud of the fact that we were able to provide this $13 billion of protection to our rural communities. And, quite frankly, it bothers us when people say crop insurance doesn't work. Crop insurance is helping to keep thousands of producers on their farms, with the ability to repay their loans to community bankers and make purchases from main street merchants. The Independent Bankers Association of America said it best when they said "crop insurance has played an important role in providing economic stability to many farm communities."

Following the significant progress made in the program during the past two years, it was truly a disappointment to see the Administration propose the elimination of the crop insurance program in favor of an approach that would provide much less economic aid to farmers when they suffer disasters on their farms. We oppose the Administration's effort to eliminate the crop insurance program and replace it with a low-level disaster program.

Mr. Chairman, the Administration's proposal has put us back in the position in which we have so often found ourselves. We make progress and increase participation, only to be threatened with setbacks by some unnecessary and arbitrary Government action. Instead of putting our energies into ways to improve the program and help farmers, FCIC has forced us to reallocate our resources into crisis management---correcting misunderstandings and dealing with this Government-created confusion.

Today in rural America farmers are unsure whether coverage remains in effect on spring-planted crops or whether policies will be cancelled and whether sign-up will take place this summer on raising, citrus, and winter wheat if Congress does not complete the changes to the program in the 1990 Farm Bill.

It is essential that farmers receive clarification from Washington that the Government—USDA and Congress—will not abandon the farmer and leave them in some type of never-never land. Unfortunately, fiscal years, crop seasons, insurance deadlines, and delivery agreement expiration dates do not coincide.

Unless the program and operating agreements are extended immediately for 1991, companies must begin cancelling policies as early as April of 1990 in a limited number of areas and by June of 1990 in many winter wheat areas. If this is allowed to happen, agricultural lenders will be unable to provide operating loans to a significant number of farmers.

Because of the critical nature of this problem we respectfully request this subcommittee to fully fund the Federal crop insurance program for fiscal year 1991 at least at the level that FCIC stated would be necessary under the current law. This will also allow an orderly transition to any new program that we anticipate will be created in the 1990 Farm Bill. However, we do alert the committee that FCIC's budget is based on the estimated premium of $677 million, which is a very conservative estimate based on the $800 million in premiums in 1989 and the good reports from the field regarding the current sign-up, which ends April 15, 1990, in most areas.

We also want to go on record with this subcommittee that we believe in and are committed to helping develop an improved crop insurance program that will work for farmers and meet public policy objectives within the budgetary constraints. An exhibit is attached for your information that outlines some of the basic principles that need to be included in an improved program to meet the risk management needs of agriculture in the 1990s.

Thank you again for the opportunity to testify. I will be pleased to answer any questions you may have.

Mr. AKAKA. Thank you very much, Mr. Gibson for your testimony. I am sure it will be helpful in our consideration.

Mr. GIBSON. Thank you.

[Mr. Gibson's prepared statement follows:]

Testimony of

Richard C. Gibson, Chairman
Board of Directors
American Association of Crop Insurers

Before the House Subcommittee on
Rural Development, Agriculture, and
Related Agencies

March 27, 1990

Mr. Chairman, members of the Subcommittee, thank you for the opportunity to be here today and present our views on the crop insurance program needs for the 1991 fiscal year. I am Richard Gibson, Chairman of the Board of Directors of the American Association of Crop Insurers; and also president of American Agrisurance, Inc. of Council Bluffs, Iowa. AACI's membership writes about 70 percent of all multiple peril crop insurance and represents both reinsured companies and master marketers. Our membership also consists of about 2,000 local agents and adjusters, located in small towns throughout rural America.

Mr. Chairman, in 1989, our industry had the opportunity to provide about $13 billion of MPCI protection to about 800,000 policyholders, covering over 50 percent of the eligible acres in the U.S. This was about double the 1988 business record. The timely handling and processing of the greatly expanded business was possible only because the workload was handled by more than 13,000 local agents and adjusters as opposed to the pre 1980 law when everything was done through multiple counties government offices.

Of course, some of this tremendous increase in business was due to lingering effects of the 1988 drought, the requirement to purchase crop insurance in the disaster act, or a requirement by a lender. But we believe that the vast majority of this new and continued business was a result of the increased awareness about crop insurance and the marketing efforts of the private insurance industry.

We're very proud of the fact that we were able to provide this $13 billion of protection to our rural communities. And, quite frankly, it bothers us when people say crop insurance doesn't work. It is helping to keep thousands of producers on their farms, with the ability to repay their loans to community bankers and make purchases from main street merchants. The Independent Bankers Association of America said it best when they said "crop insurance has played an important role in providing economic stability to many farm communities".

Following the significant progress made in the program during the past two years, it was truly a disappointment to see the Administration propose the elimination of the crop insurance program in favor of an approach that would be much less economic aid to farmers when they suffer disasters on their farms. We oppose the Administration's effort to eliminate the crop insurance program and replace it with a low level disaster program.

Mr. Chairman, the Administration's proposal has put us back in the position we have so often found ourselves. We make progress, increase participation, only to be threatened with setbacks by some unnecessary and arbitrary government action. Instead of putting our energies into ways to improve the program and help farmers, FCIC has forced us to reallocate our resources into crisis management -- correcting misunderstandings and dealing with this government-created confusion.

Today in rural America, farmers are unsure whether coverage remains in effect on spring planted crops or whether policies will be canceled and whether sign up will take place this summer on raisins, citrus and winter wheat if Congress has not completed any changes to the program in the 1990 farm bill.

It is essential that farmers receive clarification from Washington that the government -- USDA and Congress -- will not abandon the farmer and leave them in some type of "never-never land." Unfortunately, fiscal years, crop seasons, insurance deadlines and delivery agreement expiration dates do not coincide. Unless the program and operating agreements are extended immediately for 1991, companies must begin canceling policies as early as April 1990 in a limited number of areas and by June 1990 in many winter wheat areas. If this is allowed to happen, agricultural lenders will be unable to provide operating loans to a significant number of farmers.

Because of the critical nature of this problem we respectfully request this Subcommittee to fully fund the federal crop insurance program for fiscal year 1991 at least at the level that FCIC stated would be necessary under the current law. This will allow an orderly transition to any new program that we anticipate will be created in the 1990 Farm Bill. However, we do alert the Committee that FCIC's budget is based on the estimated premium of $677 million, which is a very conservative estimate based on the $800 million in premiums in 1989 and the good reports from the field regarding the current sign-up which ends April 15, 1990 in most areas.

We also want to go on record with this Subcommittee that we believe in and are committed to helping develop an improved crop insurance program that will work for farmers and meet public policy objectives within budgetary constraints. An exhibit is attached for your information that outlines some basic principles that need to be included in an improved program to meet the risk management needs of agriculture in the 1990s.

Thank you again for the opportunity to testify and I will be pleased to answer any questions you may have.

EXHIBIT #1

MPCI DOLLAR COVERAGE

I. Background

For many years farmers have been able to purchase private crop hail/fire coverage on their crops. The market place has clearly dictated the farmer preferences to be able to pick from several dollar coverage plans.

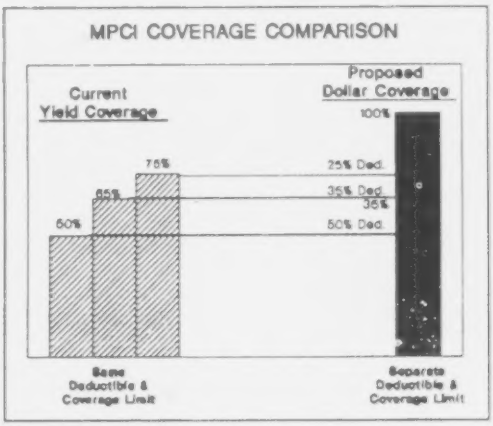
II. Dollar Plan For MPCI

Considerable support for a dollar MPCI plans has been expressed by growers. The primary advantages for such plans are:

1. Simplicity,
2. Opportunity to buy additional coverage (up to the actual value of the crop), and
3. Additional coverage choices.

III. How MPCI Dollar Coverage Can Work

1. Coverage would be quoted on a dollar basis ($200/A., 250/A., etc.) for a given number of acres (limited to the approximate dollar value of the crop. The deductible for standard plans could remain at 25, 35, and 50 percent. The deductibles should disappear as losses intensify. However, pilot programs should be initiated at lower deductibles at increased premiums in very stable production areas (i.e. Imperial Valley of CA; Central IL., etc.).



2. Deductibles would be loss payment trigger points rather than coverage limits.

3. Premiums would be expressed as a percentage rate.

4. Premium and administrative subsidy would be paid by the government to producers. The subsidy could be in the form of a crop insurance certificate given to the grower by ASCS.

5. Claim would be calculated by multiplying the percentage of insurable loss times the dollar coverage per acre times the lesser of the insured or planted acres. The percent of loss is determined by dividing the low yield by the normal yield.

IV. Loss Example

Purchased $200/A. coverage with 25% deductible.

100 bu./A. normal yield
-20 bu./A. low yield
80 bu. loss
80% damage
-25% deductible
55% payable damage
x$200/A. coverage
$110/A.
1.3 accelerated payment factor (100% / by 75% after deductible)
$1.43/A. loss payment

Note: The accelerated payment factor in the example is calculated to cause the deductible to gradually disappear starting at 26% damage. It would attach at a higher percent of loss and at a higher rate of acceleration i.e. 1.5 and begin at 51% of damage.

V. Company Yield and Dollar Coverage

The graph below illustrates how the two coverage plans compare at various yields.

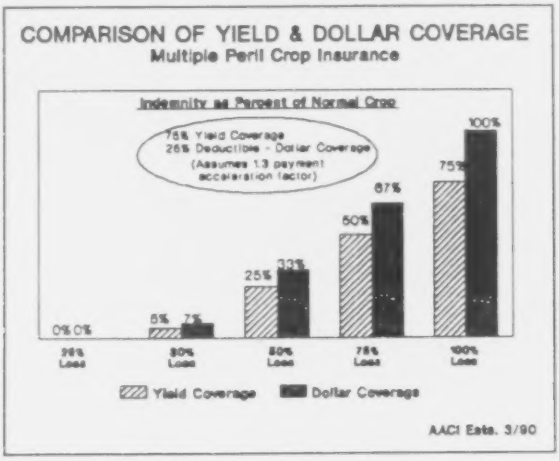


EXHIBIT #2

Principles to Improve Multiple Peril Crop Insurance
1990 Farm Bill

1. Adequate Coverage - During the hearings of the Crop Insurance Commission, the most frequent complaint we heard from farmers was inadequate coverage. A revamped crop insurance program must deal aggressively with this problem. We recommend that ASCS yields be used as the basic yield, with farmers having both the option and the incentive of proving their yield. In addition, there should be a pilot program to insure yields at higher than the current 75% level.

2. A Simpler Program for Farmers and Insurance People - One of the greatest problems with the current program is its enormous complexity and bureaucratic red tape. We must offer a simpler program under which a farmer can insure his crop for a certain number of dollars per acre, much like he is able to do under the current private hail insurance policies. Farmers will buy a program that is simple to understand and where benefits are known up front. In addition, companies can deliver such a simple program much more effectively than they can the current extremely complex program. A description of a "dollar coverage" program is attached to my statement (see Exhibit 1).

3. Greater Flexibility for Private Insurance Companies - If the farmer is to be best served, the private companies must be given the maximum flexibility to innovate and to compete for farmers' business. Under the current rigid, bureaucratic program, private insurance companies are not allowed to do what they do best -- serve the farmer in a competitive environment.

4. A Restructured Federal System - The role of the Federal Crop Insurance Corporation needs to be radically altered and reduced. We are not advocating deregulation, because we know as long as federal dollars are involved, there will need to be federal regulation. However, we feel the role of FCIC should be changed to one of a true regulator, much like state insurance commissions. The revamped agency would be charged with rate approval and ensuring that private companies build and maintain adequate reserves.

5. Farmer Premium Subsidy - Obviously, there must be federal involvement in subsidizing premiums for crop insurance. However, we feel this could be best achieved by channeling subsidies through ASCS, rather than the FCIC. We feel that it would be better to have ASCS perform the function of issuing vouchers or certificates for the premium subsidies. The most equitable way for this to be done would be for the farmer to receive a voucher to pay for a certain percentage of his premium at whatever level of insurance coverage the farmer chooses to buy.

6. Risk Bearing and Reinsurance - We feel companies can and will take more risk if they are given the proper incentives. Moreover, the companies should take the first dollars of loss, thus insuring integrity in the claims adjustment process. Government reinsurance would be necessary, especially for losses at catastrpohic levels. In addition, for certain high risk policies, it will be necessary for the government to provide for the availabilty of an assigned risk provision in the reinsurance program.

TUESDAY, MARCH 27, 1990.

ORPHAN PRODUCTS DEVELOPMENT

WITNESS

ABBEY S. MEYERS, NATIONAL ORGANIZATION FOR RARE DISORDERS, INC.

Mr. AKAKA. Our next witness is Abbey S. Meyers from the National Organization for Rare Disorders. You may proceed.

Ms. MEYERS. My written testimony is in the record explaining exactly the line items that we are concerned about.

Every year I come here and talk to this committee about the orphan drug program at the FDA. It is seven years old now. There are 333 designated orphan drugs. About 40 of them are approved for marketing. These drugs have saved the lives of many thousands and thousands of people who have rare diseases that were untreatable before 1983.

Last year this committee gave the orphan drug grant program a substantial raise—up to about $9.5 million. We hope that is going to be enough to spur more research and development.

But I would like to give you a news release from Secretary Sullivan which was just issued. You wouldn't have it on the record, so I would like to give it to you. It announces the approval of a miraculous new drug called Peg-ADA. It is a drug for severe combined immune deficiency, which is the bubble boy disease. These babies are born with a genetic disease that causes them to have no immune system. There has never been a way to treat these children, so they were put into a sterile bubble and left there because any germ would kill them.

This drug replaces an enzyme in their body, and they are now able to live normal lives. The drug was just approved on Friday.

It is symbolic, not only because of the children it saved and the fact that there are only 12 children in the United States with this disease and 40 worldwide, but it was developed through an orphan drug grant, and Secretary Sullivan points to that grant. It was a minimal amount of money—$160,000—that provided the pivotal clinical information to get this drug approved.

At the press conference this morning I met 6 of those 12 children. As I looked at them I thought about how they wouldn't be alive if it wasn't for this committee and the money that you have appropriated for the orphan drug program.

We desperately need to save more children and to come up with miracle drugs like this because this drug means that a technology has been developed to put a coating on an enzyme which makes enzyme therapy feasible now for hundreds of other illnesses that are caused by enzyme deficiencies. The Federal Government supported $160,000 worth of this, and we now have hundreds of diseases which will be treated or cured in the next ten years because of this technology.

I would like to say one more thing. We have watched, since about 1980, the staff of FDA be depleted, their buildings erode, their equipment break down. We have seen terrible things happening at the FDA because their budget has not been adequately increased. Our drugs have to go through the FDA just like all other

drugs, and they get caught in divisions because there aren't enough people to review those grants.

Each year as I come here and I see that the industry comes here to testify before you, I feel badly that consumers aren't here asking you to help the FDA to protect us. They don't have the resources to protect us any more. Please increase their budget to $730 million without the user fees and let them get the staff in there and let them take care of the generic drug scandal and let them get the FDA back on the road please.

Thank you.

Mr. AKAKA. Thank you very much for your testimony and your request. The committee will certainly consider it.

[Ms. Meyer's prepared statement follows:]

National Organization for Rare Disorders, Inc.
NORD • P.O. Box 8923 • New Fairfield, CT 06812 • (203) 746-6518

President
Jess Thoene, M.D.

Executive Director
Abbey S. Meyers

Member Organizations
Acoustic Neuroma Association
American Narcolepsy Association
American Porphyria Foundation
Amyotrophic Lateral Sclerosis Association
Ankylosing Spondylitis Association
Association for Brain Tumor Research
Association for Glycogen Storage Disease
Batten Disease Support & Research Association
Behçet Disease Research Foundation, Inc.
Cornelia de Lange Syndrome Foundation, Inc.
Cystinosis Foundation, Inc.
Dizziness & Balance Disorders Association of America, Inc.
Dysautonomia Foundation, Inc.
Dystonia Medical Research Foundation
Dystrophic Epidermolysis Bullosa Research Assoc. (D.E.B.R.A.)
Ehlers-Danlos National Foundation
Epilepsy Foundation of America
Families of Spinal Muscular Atrophy
Foundation for Ichthyosis & Related Skin Types (F.I.R.S.T.)
Friedreich's Ataxia Group in America
Gaucher Rare Syndrome Support Group International
Hemi Hemangioma Research Foundation, Inc.
Hereditary Disease Foundation
Histiocytosis Association of America, Inc.
Huntington's Disease Society of America, Inc.
Immune Deficiency Foundation
International Craniofacial Foundation
International Joseph Disease Foundation
International Rett Syndrome Association, Inc.
Interstitial Cystitis Association of America, Inc.
Lowe's Syndrome Association
Myasthenia Gravis Foundation of the United States
Myasthenia Gravis Fellowship, Inc.
Myotonic Dystrophy Information & Research Foundation
Myotonic Muscular Dystrophy Association
National Ataxia Foundation
National Brain Tumor Foundation
National Cancer Institute
National Children's Cancer Society
National Craniofacial Foundation
National Down Syndrome Congress
National Down Syndrome Society
National Eczema Association for Science
National Foundation for Facioscapulohumeral Muscular Atrophy
National Gaucher Foundation, Inc.
National Head Injury Foundation
National Marfan Foundation
National Multiple Sclerosis Society, Inc.
National Multiple Sclerosis Society
National Neurofibromatosis Foundation
National Organization for Albinism & Hypopigmentation
National Tuberous Sclerosis Association, Inc.
National Vitiligo Foundation, Inc.
Osteogenesis Imperfecta Foundation
Paget's Disease Foundation, Inc.
Parkinson's Disease Foundation, Inc.
Polycystic Kidney Research Foundation
Prader-Willi Syndrome Association
Reflex Sympathetic Dystrophy Syndrome Association
Retinitis Pigmentosa Foundation Fighting Blindness
Scleroderma Info Exchange, Inc.
Scleroderma Federation, Inc.
Sjögren's Syndrome Foundation, Inc.
Tourette Syndrome Association, Inc.
United Leukodystrophy Foundation, Inc.
United Parkinson Foundation
Williams Syndrome Association
Wilson's Disease Association

TESTIMONY OF

NATIONAL ORGANIZATION FOR RARE DISORDERS (NORD)

BY ABBEY S. MEYERS, EXECUTIVE DIRECTOR

TO THE

HOUSE SUBCOMMITTE ON AGRICULTURE, RURAL DEVELOPMENT

AND RELATED AGENCIES

REPRESENTATIVE JAMIE WHITTEN, CHAIRMAN

MARCH 27, 1990

SUMMARY OF REQUEST: $14 MILLION FOR FY91

FDA ORPHAN PRODUCT GRANT PROGRAM, AND

15 FTE'S FOR FDA'S ORPHAN PRODUCTS DEVELOPMENT OFFICE

Dedicated to Helping People with Orphan Diseases

28-669 O—90——12

Mr. Whitten, members of the Subcommittee, we appreciate this opportunity to thank you sincerely for the generous increase you appropriated last year for FDA's **Orphan Product Grant Program**.

As you know, the FDA provides grant support for pivotal studies on orphan drugs, orphan medical devices, and orphan medical foods. The grants are awarded to academic scientists and small pharmaceutical companies for clinical testing of therapies that will arrest or treat rare "orphan diseases". There are more than 5,000 such diseases which collectively touch the lives of an estimated twenty million Americans. Most of these diseases are very serious, chronic and/or life-threatening.

Academic scientists studying treatments for rare diseases usually have no place else to turn for financial support of their clinical investigations. NIH tends to fund "basic" research, and large pharmaceutical companies tend to support clinical trials on drugs for prevalent, more lucrative diseases. The voluntary health sector and foundations that fund biomedical research tend to provide small "seed money" grants that are not extensive enough for FDA's approval purposes. This is why FDA's orphan drug grant program is so important; evidence of safety and efficacy can be gathered under these clinical research projects to be used for the FDA approval process or re-labeling of marketed drugs for rare indications.

After several years of small annual increases in this vitally important appropriation, this Subcommittee appropriated $9.751 million for the orphan product program last year (FY90), with no less than $7,575,000 to be spent on orphan product research grants. We are extremely grateful that you have recognized the merit of this unique program, and we thank you from the bottom of our hearts.

We are asking you this year to appropriate $14 million for this program which is the amount authorized by the Orphan Drug Act. Our request is based on the fact that there are 5,000 rare diseases which must share the $7,575,000 you appropriated last year, which amounts to **$1,515 per disease**. Obviously not every rare disease will require funding next year because sadly, no research at all is being pursued on many of these illnesses. But there is a desperate need to support clinical investigations on treatments that have some preliminary evidence of efficacy, and the competition for FDA's orphan drug grants is fierce. Last year, out of FY89 appropriations, FDA funded only 1/6 of grant applications to this program. Out of the 21 funded grants, we are delighted to tell you that new treatments are being investigated for autism, a fatal cancer in children (neuroblastoma), porphyria, ulcerative colitis, Wilson's disease, sickle cell anemia, lead poisoning and many other serious orphan diseases.

Conversely, the President's proposed FDA budget requests $63 million for FDA's AIDS program, representing a 275% increase from FY88 to FY91. AIDS is only one disease, but FDA has 300 full-time staff and substantial resources devoted solely to HIV drugs even though there are

millions of desperate people dying of many other diseases. The Office of Orphan Product Development has 12 staff devoted to 5,000 rare diseases, and it has only $9.7 million this year to address the massive orphan drug development problem.

Thus, we ask you to increase the FTE staffing level for the FDA's Office for Orphan Product Development to 15. This figure is in line with the recommendations of the National Commission on orphan Diseases, which submitted its report to Congress last year.

Again, we thank you for your generosity last year, and for your ongoing interest and compassion for the rare disease patients who are the beneficiaries of this lifesaving program. We hope that your deliberations about the entire FDA will result in a vastly increased budget for the entire agency because it is a well known fact that FDA is overworked and understaffed at all levels. Orphan drugs, just like other drugs, must transverse the regular drug approval system through the various divisions of FDA. Unless those divisions are adequately staffed and funded, lifesaving orphan drugs will be delayed and lives will be needlessly lost. It is time to reassess the status of facilities, equipment, and staffing levels of the FDA, so you can determine the effects that budget and staff reductions throughout the past decade have had on the entire agency, and consequently on the health and welfare of the American public.

Thank you.

TUESDAY, MARCH 27, 1990.

ANIMAL HEALTH PROGRAMS

WITNESSES

DR. ROBERT F. KAHRS, AMERICAN VETERINARY MEDICAL ASSOCIATION, REPRESENTING THE FDA COUNCIL

TERRY LIERMAN

MARGUERITE DONAGHUKE

Mr. AKAKA. Our next witness is Robert Kahrs of the American Veterinary Medical Association.

We welcome you to this hearing. We looking forward to your testimony. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

You may preceed.

Dr. KAHRS. Thank you very much. My name is Bob Kahrs. I am Dean of Veterinary Medicine at the University of Missouri. I speak to you representing two organizations, the American Veterinary Medical Association and the Association of American Veterinary Medical Colleges.

Our interest and expertise is in the prevention and control of animal disease. This impacts greatly not only on agricultural productivity, but on the safety of the food supply.

The national investment in animal health research is less than one half of one percent of the annual cost of animal diseases.

With respect to APHIS—the Animal and Plant Health Inspection Service—the veterinary profession thinks that they are doing a good job. We join 123 other animal protection groups and scientific organizations in supporting a request for a $12 million appropriation for APHIS for animal welfare to support the laws that you have already enacted.

APHIS has a broad range of programs. They really need more flexibility so that they can administer them and properly conduct them.

With respect to the Cooperative States Research Service—CSRS—the veterinary profession strongly supports animal health base funding as incorporated in title 1433 and sincerely requests a meager increase of $324,000 to bring this figure to $5.73 million. We also request that section 1433 be retained independently of any other national initiative.

With respect to competitive grants for animal health research under the CSRS, we go along with the concept that special and competitive grants be enveloped into the national initiative and funded under the section of animal systems research, which has requested $30 million.

If that cannot be done, we sincerely request that $5.91 million for competitive grants be funded in fiscal year 1991.

This is a complicated year because not only is there a Farm Bill but there is also an agricultural research initiative. We are concerned that existing appropriations stay clear of the potential of being enveloped into the Farm Bill if the appropriate sections are not funded.

The animal component of biotechnology research: our organizations endorse an increase within the $30 million animal systems research part of the national initiative. Like competitive grants, if that section is not funded we hope that these dollars will be incorporated in the competitive grants program in fiscal year 1991.

There are two areas in which the profession supports the Administration recommendations—in the minor use drugs, the IR-4 program. We applaud the Administration's recommendation to increase that appropriation to $329,000. We also support the Administration's recommendations for $10 million in water quality and $5 million in research in response to global change.

With respect to higher education, section 1417, the veterinary profession strongly supports $5 million for graduate fellowships. These are known as the national needs fellowships. Their performance has been outstanding. The Administration recommends $4 million. NASULGC and other thoughtful groups think it should be at least $5 million.

We also support an $11 million appropriation for capacity building in the 1890 institutions.

With respect to the Extension Service, the veterinary profession is praising the food animal residue avoidance databank—known as FARAD—which has a significant impact on reducing residues in the food supply and maintaining food safety. Although that is not a line item in the farm legislation, we recommend that the Extension Service continue to provide $200,000 annually to maintain their share of this food animal residue bank.

Slightly off the subject of the USDA, but back to the subject previously mentioned of the FDA, the veterinary medical profession thanks Congress for upgrading the Center of Veterinary Medicine of the Food and Drug Administration. This is the group that is responsible for drug applications and surveillance on animal drugs.

Like the previous speaker on the FDA, the two organizations that I represent strongly oppose imposition of user fees on users of the FDA new drug licensing procedure.

I thank you for the opportunity to express these views. My written testimony has been submitted. I would be glad to answer any questions.

Mr. WATKINS [assuming Chair]. Dr. Kahrs, your full testimony will be made part of the record. We appreciate your concern and your interest in being here for this presentation. I hope when you go back to the University of Missouri you will tell my good friend, Bruce Bullock, hello for me. He is the department head for the Agricultural Economics Department there.

Dr. KAHRS. I sure will tell Bruce hello.

Mr. WATKINS. He and I were State officers in FFA together in Oklahoma. You may proceed.

Dr. KAHRS. Thank you, sir.

[CLERK'S NOTE.—The list of organizations in support of animal welfare is to lengthy to be reprinted. A copy has been retained in committee files.

[Dr. Kahrs, prepared statement follows:]

Congress of the United States
House of Representatives
Committee on Appropriations
Subcommittee on Rural Development, Agriculture and Related Agencies

Statement on behalf of
American Veterinary Medical Association
and
Association of American Veterinary Medical Colleges

Presented by
Robert F. Kahrs, DVM, PhD
Dean, College of Veterinary Medicine
University of Missouri
Columbia, MO 65211

March 27, 1990

Mr. Chairman and Members of the Subcommittee, I am Dr. Robert Kahrs, Dean of the College of Veterinary Medicine at the University of Missouri. I appear today on behalf of the American Veterinary Medical Association and the Association of American Veterinary Medical Colleges. Together we represent nearly 50,000 veterinarians and the entire veterinary medical teaching and research system. Veterinary medicine is committed to improving the health and well-being of animals of all types (including the public health of mankind), and to increasing American agriculture's competitive advantage, especially in international markets. Veterinarian medicine's contribution to these areas is critical.

Loss of productivity due to animal disease and death continue to represent a major cost of livestock production and a persistent threat to the safety of America's food supply, yet we fail to invest sufficiently in this area of research. The overall national investment in animal health and disease research totals less than one-half of one percent of the annual disease loss suffered by the livestock industry. Our outlook is too short term. We address only the critical immediate problems and invest far too little in the basic research needed to develop information that will lead to more effective and more economical means to prevent animal disease.

Summary of Specific Program Requests

Animal and Plant Health Inspection Service
- $12 Million for APHIS Animal Welfare Program

Cooperative States Research Service
- $5.731 Million for Section 1433 Animal Health Research
- Support for the National Research Initiative
  - $30 Million for "animal systems research"
    - Including animal health and disease research
    - Including biotechnology on animal systems
- $329,000 for Minor Use Animal Drugs
- $10 Million for Water Quality and Management
- $5 Million for Global Change
- Higher Education
  - $4 Million for Graduate Training Fellowships
  - $11 Million for 1890 Capacity Building Grants

Animal and Plant Health Inspection Service

AVMA and AAVMC together with a broad coalition of research and animal welfare organizations strongly support a $12 million appropriation for the APHIS animal

welfare program and wish to emphasize the need for regular and careful inspections, through training of inspectors and to ensure that APHIS has the management and administrative support to carry out its responsibilities.

We also support the broad range of APHIS programs that protect our animal resources from diseases and pests and preserves their competitiveness in world markets. APHIS serves a critical role in preventing the entrance of foreign animal diseases, promoting effective interstate movement of livestock, collection of animal health information, licensing and testing of veterinary biologicals and programs for eradication of targeted animal diseases. An example of critical need is an additional $4.3 million to undertake a 3 year eradication program on swine brucellosis. We believe that APHIS is doing an excellent job, but they have a serious need for more financial resources and flexibility in program administration.

Cooperative States Research Service

Funding for Animal Health Research (base programs in Section 1433). Seventy-nine institutions in the 50 states are eligible to receive these funds which support research on diseases and pests affecting food animals and horses; wildlife diseases that endanger livestock production; animal diseases transmissible to humans; and the control of livestock predators. These funds are distributed to the states in relation to that state's livestock population and its capacity to conduct animal health and disease research. Each state must match any Section 1433 funds received annually in excess of $100,000. Although these funds comprise less than 3 percent of all federal and state dollars spent on animal health research their importance in promoting research on newly identified and emerging diseases can not be overstated. In these areas they may provide the only immediate source of funds. They also provide seed money for applied research projects to address technology transfer and new applications of technology. Section 1433 also supports ongoing investigation of major health problems plaguing specific animal industries, including Johnes disease in cattle, mycoplasmosis in poultry, and blue tongue in sheep.

The authorization level of $25 million would be well spent. However in order to ensure adequate support for this essential program, even in a climate of fiscal austerity, we recommend only a $324,000 or 6 percent increase over FY 1990 to a new level of $5.731 million. We are joined in this recommendation by NASULGC. We also want to emphasize that this request is not supplanted by any funds supplied through the National Research Initiative.

Competitive research grants for animal health. Since 1977 Congress has funded competitive grants for animal health research under the Special Grants Section 1414(2)(c)(1). FY 1990 funding for these grants totaled $5.633 million. Although not all special grants are competitively funded, animal health research carried out under this section is peer-reviewed and evaluated in a manner similar to the competitive grants process of Section 1414(2)(b).

Veterinary medicine supports the National Research Initiative concept and the expansion of the competitive grants program. AVMA and AAVMC recommend that Congress fund these grants as part of the National Research Initiative within the $30 million designated for "animal systems research". In this way the importance of animal health research and the quality of the research proposals would allow funding in FY 1991 to be significantly increased above the FY 1990 level.

Should Congress not support the National Research Initiative at the level of the Administration's request, including $30 million for "animal systems research", we urge that this animal health program be continued under either Section 1414(2)(b) or 1414(2)(c) and that the appropriation level be no less than $5.971 million (a $338,000 or 6 percent increase).

Biotechnology. We also believe that the animal component of competitive grants previously identified as biotechnology will be reasonably well served in the $30 million designated for "animal systems research" in the National Research Initiative; however, we are concerned that these critical research programs be continued. If the Initiative is not funded we recommend that increased funding be provided for biotechnology within 1414(2)(b).

Minor Use Animal Drugs (IR-4 Research Program). This has been one of the most useful and successful special grants programs with a visible impact on the animal industry. This program funds the development of drugs for species that would otherwise have no therapeutic agents available. We applaud the Administration's recommendation that these funds be increased to $329,000 for FY 1991 and urge Congress to appropriate the full amount. This 45 percent increase can be easily justified due to the critical effect of this program on a wide array of animal drugs.

Water Quality and Management. Animal health and productivity is closely tied to water quality. Animals not only serve as sentinels to reduced water quality, but also may serve as a source of contamination for water supplies. More research is needed on the role animals play in this regard and we support the Administration's proposal to increase special grant funding of water quality research to $10 million.

Global Change. Animal health and productivity is directly affected by any global change. Climatic change influences the microenvironment of animals, parasites, microbiologic agents, and vectors of disease agents. Though a large body of information exists on tropical animal diseases, we know very little about the changes in animal diseases which may accompany minor climatic change. We urge Congress to add the $5 million dollars recommended by the Administration for research on Global Change.

Higher Education. The recommendation of the Administration that funding of Graduate Training Fellowships be increased to $4 million recognizes the vital importance of this program to agriculture. We urge support at no less than that level and strongly support the NASULGC recommendation of $5 million. We also support the increase to $11 million for 1890 Capacity Building Grants.

Extension Service

While not a Congressional line item we wish to call attention to the Food Animal Residue Avoidance Databank (FARAD) program which ensures the safety of the food supply by minimizing the incidence of harmful drugs and chemicals in foods of animal origin. USDA Extension's service and the cooperating universities have funded this effort since 1983 and it is essential that the program be expanded. It will require approximately $220,000 of Extension funding to carry the 60 percent federal share of this program in FY 1991 and we urge Congressional support of this program which provides critical information to livestock producers, veterinarians, and state and federal food safety officials.

Food and Drug Administration - Center for Veterinary Medicine

We wish to thank Congress for the additional support given FDA and The Center for Veterinary Medicine in FY 1990. Dr. Young designated 27 of the new positions for the Center for Veterinary Medicine and we understand that they have excellent applicants to fill the new positions. For FY 1991 we wish to express our concern regarding the Administration's intent to impose $157 million in user fees for drug applications and inspections. We believe that these user fees are inappropriate and that these activities should be supported through a full direct appropriation for FDA.

Thank you for the opportunity to present our recommendations. I would be pleased to respond to any questions or elaborate on these recommendations.

TUESDAY, MARCH 27, 1990.

CSRS

WITNESSES

MIKE WALLACE, NATIONAL COALITION ON INTEGRATED PEST MANAGEMENT

JACK COOPER, NATIONAL FOOD PROCESSORS ASSOCIATION

MARK MASLYN, AMERICAN FARM BUREAU

Mr. WATKINS. Next is Mr. Mike Wallace from the National Coalition on Integrated Pest Management.

Mike, we accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. Please summarize your statement. I noticed when I came in that the Committee is behind schedule. The staff has asked me to try and get back on schedule.

Mr. WALLACE. We'll sure give it a shot. I guarantee that.

Mr. Chairman, my name is Mike Wallace. I am the Executive Director of the Texas Pest Management Association and Chairman of the National Coalition on Integrated Pest Management.

I have with me today Mr. Jack Cooper with the National Food Processors Association and Mr. Mark Maslyn with the American Farm Bureau.

The National Coalition on Integrated Pest Management is sincerely concerned and willing to work earnestly toward reducing the frequency and quantity of pesticide use in agriculture. Reductions in pesticide use would help maintain and restore the quality of our nation's surface and groundwater and wildlife. Reduction in pesticide use in agriculture would also help to reduce the levels of pesticide residues in food.

We in the Coalition do feel that the food supply and the water supply in the United States is the safest in the world.

The Coalition represents growers, farmers, associations, commodity groups, food processors, food marketing interests, pest control operators, private agriculture consultants, environmental groups, and consumers. We have provided you a copy of the list with the information that the committee received.

We are working toward reductions in pesticide use in agriculture in a highly positive way by actively supporting integrated pest management.

The Coalition firmly believes that IPM systems, based upon biological control, host resistance, cultural management tactics, and the safe use of pesticides, will lead directly to pesticide reduction at its principal source. We feel that it is time for American agriculture to become more biologically based in the management of pests through broad-scale implementation of IPM.

Despite a severe shortage of Federal funding support, the Cooperative Extension Service IPM programs have done an excellent job in developing pilot programs that serve as the base for reductions in pesticide use.

We believe it is now time to make proven IPM technologies more broadly available across the United States through the Cooperative Extension Service; therefore, the National Coalition on IPM is re-

questing that the Congress of the United States increase Federal funding for the Cooperative Extension Service IPM from the current level of $7.1 million to $32 million. The increased funds will be used to hire Extension IPM specialist staff to coordinate programs for the express purpose of implementing biologically intensive integrated pest management programs.

It is anticipated that about 300 additional IPM specialists will be needed to implement a national IPM program. These IPM programs will focus on pesticide alternative technologies. The IPM programs would involve extensive training of farmers through on-farm demonstrations of IPM systems, field and classroom workshop, and through the use of a high-quality, multi-media training material situation.

Of the $32 million, the Coalition would like to see $2 million used for the implementation of urban IPM programs. Urban IPM programs using similar educational techniques as agriculture would focus on alternatives to pesticides for controlling pests affecting the urban dweller. We believe IPM is a highly-suitable technology for reducing pesticide exposure in structures and on landscapes.

The needed funding increase we feel will result in the targeting of proven IPM technologies at the major sources of pesticide use. Based on our assessment, the National Coalition on IPM fully expects with the requested increase in IPM funding for USDA CES that pesticide uses can be reduced by at least 50 percent or greater, depending on selected commodities, over the next decade.

As important, we believe, the increased use of IPM will result in improved grower profitability by significantly reducing the cost of production. For example, a recent USDA evaluation of extension IPM programs involving 15 States and 9 commodities showed that IPM participating growers increased net income by $54 million per year when compared with non-participants. Should IPM be made available to all growers in the 15-State sample area, it was estimated that net returns could be increased by $578 million per year.

Our Coalition understands that the President's budget is asking for a $40 million funding of the food safety initiative and an increase of $52 million for the water quality initiative. We feel that both initiatives are very worthwhile; however, we observe that none of these funds is targeted for getting technology to the grower that could greatly reduce or eliminate the problem through integrated pest management.

Cooperative Extension Service IPM program funding through Smith/Lever 3(d) funding has been essentially flat for the last 11 years. It is our recommendation that $32 million we request for IPM could be targeted from the existing food safety, water quality, or other initiatives.

The National Coalition on IPM strongly urges your support for increasing CES IPM funding under Smith/Lever 3(d). We believe that an expanded IPM initiative is a positive step toward the reduction of pesticide use, with the added bonus of increasing farmer profitability.

Thank you.

Mr. WATKINS. Thank you, Mr. Wallace. We appreciate your testimony and your comments. You have two other gentlemen with you. May I get their names for the record?

Mr. MASLYN. My name is Mark Maslyn. I am with the American Farm Bureau Federation, Assistant Director of National Affairs.

Mr. WATKINS. Dealing with the same subject?

Mr. MASLYN. Same subject.

Mr. WATKINS. Sir?

Mr. COOPER. I am Jack Cooper, with the National Food Processors Association. I am the Director of Environmental Affairs for the Association. All on the same subject. We all want to see an increase in funding for the Extension Service to support IPM programs.

Mr. WATKINS. We thank you so much for your interest. We agree that we have to have additional revenue put into research and extension if we can find some way to do that and meet Gramm Rudman targets and without violating the Administration's "read my lips" no new taxes policy.

Mr. WALLACE. We understand. Thank you.

[Mr. Wallace's prepared statement follows:]

Testimony Before

The House Committee on Appropriations
Subcommittee on Rural Development,
Agriculture and Related Agencies

Concerning

Working for Safe Food, Clean Water and Wildlife Conservation
Through
Expanded Implementation of Integrated Pest Management

March 27, 1990

Mike Wallace, Chairman
National Coalition on IPM
8000 Centre Park Dr., Ste 340
Austin, Texas 78754
(512) 834-8762

Mr. Chairman, before I begin, I would like to request that my testimony and all supporting documentation be made part of the permanent record.

The National Coalition on Integrated Pest Management (NCIPM) is sincerely concerned and willing to work earnestly toward reducing the source of pesticide pollution in agriculture. This pollution threatens the quality of our water and endangers wildlife. The Coalition also strongly feels that positive steps can be made to reduce pesticide residues in food. The Coalition representing growers, farmer associations, commodity groups, food processors, food marketing interests, pest control operators, private agricultural consultants, environmental groups and consumers (see attached list of Coalition participants) is addressing the problem of source reduction of pesticide pollution in a highly positive way by actively supporting integrated pest management (IPM).

The Coalition firmly believes that IPM systems based upon biological control, host resistance, cultural management tactics and the safe use of pesticides will lead directly to pesticide reduction at its source, the farms and ranches of the United States. We feel that it is time for American agriculture to become more biologically based in the management of pests through the broad scale implementation of IPM. Despite a severe shortage of federal funding support, the Cooperative Extension Service IPM programs have done an excellent job in developing pilot programs that serve as the base for pesticide pollution prevention (see enclosed position paper). Owing to the national priorities of clean water, safe food and wildlife conservation, we believe it is now time to make proven IPM technologies more broadly available across the United States through the Cooperative Extension Service.

Therefore, the National Coalition on IPM is requesting that the Congress of the United States increase federal funding for Cooperative Extension Service IPM from the current level of $7.1 million to $32 million. The increased funds will be used to hire Extension IPM specialist staff to coordinate programs for the express purpose of implementing biologically intensive IPM programs. It is anticipated that about 300 additional IPM specialists will be needed to implement a national IPM program. These IPM programs will focus on pesticide alternative technologies. The IPM programs would involve extensive training of farmers through "on farm" demonstrations of IPM systems, field and classroom workshops, and through the use of high quality, multi-media training materials. Of the $32 million, the Coalition would like to see $2 million used for the implementation of urban IPM programs. Urban IPM programs using similar educational techniques as agriculture, would focus on alternatives to pesticides for controlling pests affecting urban dwellers. We believe IPM is a highly suitable technology for reducing pesticide exposure in structures and on landscapes.

The needed funding increase, we feel, will result in the targeting of proven IPM technology at the source of the problem. Based upon our assessment, the National Coalition on IPM fully expects that pesticides can be reduced by at least 50% or greater

depending on selected commodities. As important, IPM will increase grower profitability by significantly reducing the cost of production. For example, a recent USDA evaluation of extension IPM programs involving 15 states and 9 commodities showed that IPM participating growers increased net income by $54 million per year when compared with non-participants. Should IPM be made available to all growers in the 15 state sample area, it was estimated that net returns could be increased by $578 million per year.

Our Coalition understands that the President's Budget is asking for a $40 million dollar funding of the food safety initiative and an increase of $52 million for the water quality initiative. We feel that both initiatives are very worthwhile, however, we observe that none of these funds is targeted for getting technology to the grower that could greatly reduce or eliminate the problem through IPM. Cooperative Extension Service IPM program funding (Smith/Lever 3(d)) has been essentially flat for the last 11 years. It is our recommendation that $32 million we request for IPM could come from existing food safety, water quality or other initiatives.

The National Coalition on IPM strongly urges your support for increasing Cooperative Extension Service IPM funding (Smith/Lever 3(d)). We believe that an expanded IPM initiative is a positive step toward source reduction of pesticide pollution with the added bonus of increasing farmer profitability. Thank You.

Participants
National Coalition on IPM

Texas Pest Management Association
American Farm Bureau Federation
Pioneer Hi-Bred
Ocean Spray Cranberries, Inc.
Del Monte
National Alliance of Independent Crop Consultants
General Mills, Inc.
National Food Processors Association
Curtice-Burns Foods, Inc.
Gerber Products Co.
Food & Marketing Institute
National Association of Wheat Growers
Natural Resources Defense Council
Center For Resource Economics
National Wildlife Institute
John Taylor Fertilizers
A. Duda & Sons, Inc. (Fla)
Campbell Soups, Inc.
Grocery Manufacturing Association
Institute of Food Technologists
Pennsylvania Apple Marketing Board
National Pest Control Association
Pesticide Public Policy Foundation
National Association of State Departments of Agriculture
Purdue University
Clemson University
Texas A & M University
National Association of State Univ. & Land Grant Colleges
Oklahoma State University
EPA/OPP
EPA/FOD
EPA/SCS
EPA/IPM
EPA/ORD
Extension Service USDA
USDA/ERS
USDA/ARS
USDA/CSRS
USDA/APHIS

The Coalition has also contacted and expects involvement from:

National Corn Growers Association
National Soybean Association
Wholesale Grocers Association
Almond Growers of California
Sunkist, Inc.
National Cattlemen's Association
United Fresh Fruit & Vegetable Association
Frozen Fruit Institute
National Wildlife Federation
Sierra Club
Rodale

(Revised 3/8/90)

Integrated Pest Management

A National Evaluation of Extension Programs

Integrated pest management (IPM) educational programs have been funded by Federal Extension and conducted through the Cooperative Extension Service since 1971. The adoption of IPM by U.S. growers represents a signal success in ability of the Cooperative Extension Service to effectively and efficiently transfer technology. A recent national evaluation of these programs was conducted by Virginia Cooperative Extension Service and cooperating states under a cooperative agreement with Federal Extension. Selected highlights of this national study are provided.

- From 1973 through 1983 the Federal Extension Service allocated approximately $7 million per year (for all 50 states and 3 protectorates) specifically for IPM.
- The evaluation study only considered approximately 3500 growers (covering 15 states and 9 commodities), IPM users experienced a total difference in net returns over non-users in excess of $54 million per year.
- Extrapolated to the 15 state, 9 commodity farm segment examined in this study, IPM experienced an increase in net returns of over $578 million per year.
- Privatization of some aspects of IPM has resulted in a tremendous expansion of pest management consulting firms. These firms may realize estimated gross revenues in excess of $400 million for the 15 state study area.
- Extension programs incorporated over 27 million acres of U.S. crops.
- It was found that IPM reduces pest control costs, reduces chemical use, reduces the risk of crop loss, and reduces impacts to human health and the environment.
- A wide variety of educational techniques were used for successful IPM technology transfer. The study showed bulletins, handbooks, and manuals were very useful to clientele, private consultants and Extension personnel.
- Face-to-face contact by Extension specialists with individuals and through small group meetings was rated high. Those that had experience with electronic technology thought it quite useful.
- Private pest consulting firms using Extension IPM programs as a model recognized the important, ongoing role of Extension in the delivery of advanced technology.
- Extension should place greater emphasis on increased efficiency and profitability as a valid rationale for increased IPM use by growers, particularly in reaching the goal of low-input, sustainable agriculture.
- A Maryland urban study showed success in delivering IPM to the urban and suburban population. Further expansion of the concepts and practices of IPM with urban clientele offers tremendous potential for minimizing pesticide misuse.

2/28/90

—The National Coalition on Integrated Pest Management—

Working for Safe Food, Clean Water and Wildlife Conservation

Through

Expanded Implementation of Integrated Pest Management

An Executive Summary

The National Coalition on Integrated Pest Management (NCIPM) represents a novel partnership between the agricultural community and government. The Coalition was formed in response to the public's increasing concern over safe food, water quality and wildlife conservation. The Coalition represents growers, farmer associations, commodity groups, agricultural consultants, food processors, food marketing interests, pest control operators, environmental groups and consumers who desire to work closely with federal and state agencies to advance the implementation of integrated pest management (IPM). IPM is the best approach to ensuring a healthy environment while keeping U. S. agriculture competitive. IPM is based upon sound biological and ecological principles. *IPM is a pest population management system that uses all suitable techniques, such as natural enemies, pest resistant plants, cultural management and pesticides in a total crop production system to anticipate and prevent pests from reaching damaging levels.* Equally important, IPM programs have a 15 year track record of significantly reducing pesticides and increasing net profit for American agriculture while maintaining quality and yield.

Safe food, clean water and wildlife conservation is viewed as a public mandate. The Coalition wishes to maintain and improve the safety of food and water for present and future generations. This means that over the next 10 to 15 years, the agricultural community will have to change from systems that rely heavily on pesticides to prevent pest damage to biologically based IPM systems. These new systems, termed *Bio-Intensive IPM*, will use biological control, host resistance and cultural management as primary tactics for the control of pests. Pesticides in Bio-Intensive IPM systems will be environmentally safe and used secondarily and only when specifically warranted.

To accomplish this difficult transition NCIPM is strongly supporting expanded federal funding for the Cooperative Extension Service (CES). To achieve the goal of a healthier environment, IPM programs must be made available to all U.S. farmers. The CES, working with the agricultural community, has already established itself as the national leader in implementing IPM programs. The CES has staff, facilities and functional IPM programs operating in every state. The Coalition is asking that CES be given additional funding to expand their IPM programs throughout the agricultural community from production, to processing, through retail sales and on to the consumer. Also, CES IPM programs must be made available in urban areas to manage pests attacking structures and landscapes and to educate city dwellers on the value of IPM in agriculture.

In addition to an increase in funding for CES to adequate levels to ensure the availability of IPM programs, the responsibilities of other sectors of agriculture are outlined. The state Agricultural Experiment Stations and CES need to respond to the challenges of the future by developing and implementing Bio-Intensive IPM systems. Producers must be heavily

involved in the planning stages and in the actual implementation of programs. Private agricultural consultants, pest control operators and lawn care managers must work closely with CES to provide high quality IPM services. The agricultural chemical industry must continue to respond by developing environmentally safe and effective pesticides. Food processors, retail grocers and grower marketing orders must re-examine cosmetic standards for food to allow more field use of IPM without loss in food quality. Consumers must recognize that IPM is a rational approach for a continuous supply of high quality food. And finally, federal and state governments must support IPM and look to the future by increasing funding for IPM development and implementation.

IPM programs can provide the public with safer food, cleaner water and an abundant wildlife while keeping U. S. agriculture financially competitive. The National Coalition on Integrated Pest Management is striving to achieve a solid agricultural community-government partnership to make the widespread use of IPM a reality.

—The National Coalition on Integrated Pest Management—

Working for Safe Food, Clean Water and Wildlife Conservation

Through

Expanded Implementation of Integrated Pest Management

The National Coalition on Integrated Pest Management (NCIPM), an agricultural industry-government partnership, was formed to support and promote the implementation of integrated pest management (IPM) in the United States as a biologically and environmentally sound approach to pest control. The primary formation of the Coalition was in response to the public's concerns over safe food, clean water and wildlife conservation. The Coalition represents growers, farmer organizations, commodity groups, agricultural consultants, food processors, food marketing organizations, pest control operators, environmental groups and consumers who desire to work closely with federal and state agencies to advance the implementation of IPM. Integrated pest management is a pest population management system that uses all suitable tactics, such as natural enemies of pests, pest resistant plants, cultural management and pesticides in a total crop production system to anticipate and prevent pests from reaching damaging levels. Integrated pest management programs have an outstanding track record of reducing pesticide use, thus ensuring safer food, water and wildlife conservation. The Coalition wishes to maintain and improve the safety of food and water for present and future generations through strongly supporting IPM programs.

The National Coalition on Integrated Pest Management seeks to improve dialogue and coordination among U.S. government agencies concerned with IPM by developing a working partnership with the United States Department of Agriculture, the Cooperative Extension Service and the State Agricultural Experiment Stations, and the Environmental Protection Agency, Through this industry-government partnership, the coalition is striving to make food producers, agricultural industries, food processors, the retail sales industry, policy makers and consumers aware of the benefits of IPM. The Coalition recognizes the critical national need to increase funding for expanding IPM educational programs carried out by the Cooperative Extension Service (CES) and to use these programs as the vehicle to increase IPM implementation. Finally, the Coalition wishes to become a full partner in the planning process to identify national priorities for agriculture and urban IPM programs. The coalition is fully prepared and willing to seek increased federal, state and industry funding to develop and deliver IPM in the U. S.

Public Concern: Pesticide Contamination of Food, Water and Wildlife

Recent concerns involving pesticide residues in food, groundwater and natural impacts on natural resources have substantially heightened public awareness regarding the safety of the food we eat and the water we drink. Public policy makers are deeply concerned about human and environmental health and wish to make cogent decisions to protect U.S. food and water supplies for the future. Pesticide use in U.S. agriculture has continued to increase over the last 10-15 years. National surveys indicate that the majority of this increase has been from herbicides as a result of increased labor and fuel costs and for weed control, as well as the expanded use of conservation tillage practices. Conservation tillage practices reduce soil erosion by relying on herbicides for weed control rather than on mechanical cultivation of the soil. Insecticide and fungicide use has increased only slightly within this

time frame. Integrated pest management programs, in specific instances, have been shown to significantly reduce pesticide use, thus providing a reasonable response to public concern.

A Response to the Concern Through IPM

Although national pesticide use has increased, there are numerous outstanding examples of ongoing IPM programs implemented through CES. Cooperative Extension Service IPM educational programs have had a substantial impact in reducing pesticide use while maintaining or increasing profits. These programs provide a clear signal of the potential for IPM to deliver on its promise to reduce the unnecessary use of agricultural chemicals.

Cooperative Extension Service IPM programs, funded by USDA, were initiated as pilot programs in several states in the early 1970s. Because of the immediate success in reducing pesticide use and increasing net profits, USDA funding was increased in the mid-1970s to initiate IPM programs in every state and U.S. protectorate. The primary IPM technologies that were transferred included: pest resistant plant varieties, computer simulation models to predict pest population increases, judicious use of pesticides based on field monitoring ("scouting") and economic thresholds, preservation of natural enemies by adjusting pesticide use, and cultural management that depressed pests and favored natural enemies. The overriding goal of many IPM systems was to use pesticides as the last resort after all other alternatives were exhausted.

Outstanding examples of pesticide reduction can be cited from individual state IPM programs. Several fruit and vegetable IPM programs have been conducted by CES in partnership with producers and food processors. Because of the strict cosmetic standards set by government and the retail sales industry, fruit and vegetable producers must rely heavily on pesticides to meet these standards. Despite this constraint, a joint CES-industry (Gerber Foods, Inc. and Campbell Foods, Inc.) program developed for processing carrots in the Lower Rio Grande Valley of Texas reduced insecticide use by 66% (from 6 to 2 applications) without loss in yield or quality. Similarly, within one year, the Texas IPM program reduced the amount of insecticide used on fresh market cabbage by 44%.

A New York state CES IPM program successfully reduced the amount of pesticide use on apples by 38%. The New York IPM program working with onion growers was able to reduce pesticide use by 31%. Potato growers in New York practicing IPM reduced fungicide use by 21% and insecticide use by 7%. California almond growers working with the University of California IPM project have reduced total pesticide use by 37%. Gerber Foods, Inc., in cooperation with the Arkansas and South Carolina CES, funded a pilot peach IPM program which reduced insecticide use on peaches by 33%. Similar industry-CES programs have been conducted with the support and cooperation of Ocean Spray Cranberries, Inc. The Massachusetts, Rutgers, Wisconsin and Washington CES cooperated with Ocean Spray to develop a comprehensive cranberry IPM program. Del Monte Corporation has worked extensively with the University of Wisconsin IPM project on green beans and a variety of other IPM projects. Several other successful cases can be cited across the U.S where the food processing industry and agricultural producers formed productive partnerships with CES.

There are outstanding cases of IPM successes on other major cropping systems. Insecticide use on cotton, grain sorghum and peanuts has been significantly reduced since the introduction of IPM by CES in the early and mid-1970s. For example, in 1971 (pre-IPM) U.S. insecticide use on cotton, grain sorghum and peanuts was 73.4, 5.7 and 6.0 million pounds, respectively. By the early 1980s after 10 years of IPM, insecticide use dropped to 16.9, 2.5 and 1.0 million pounds respectively for cotton, grain sorghum and peanuts.

During this period acres planted to these three commodities remained relatively constant. Not only was the total amount of insecticide reduced, but the proportion of acres treated was also reduced. Cotton, grain sorghum, and peanuts experienced a decrease in acres treated by 46%, 48% and 54%, respectively.

Approximately 90% of Indiana's continuous corn acreage (1.0 million acres) is treated with a soil insecticide for corn rootworm control. By rotating corn with another crop, producers virtually eliminated the need for a rootworm insecticide. Fifteen years ago approximately 30% of the acreage was in a continuous corn cropping system. Today this represents only 17%. The reasons for this reduction include: 1) the near equal dollar return from producing corn or soybeans, 2) numerous agronomic advantages with growing these crops in a rotational system, 3) changes in the government program, and 4) the promotion of corn/soybean rotation by Purdue University's IPM program personnel. This amounts to yearly savings in insecticide costs of approximately $7.6 million, but perhaps of greater importance, it represents a reduction of about 800,000 pounds of insecticide applied to Indiana soils.

Another major benefit of IPM has been the significant increase of private agricultural consultants in the U.S. The number of private agricultural consultant firms has risen substantially in the last 15 years. The National Alliance of Crop Consultants represents several thousand private consultants. Private consultants have worked with many CES-IPM programs in the technology transfer process. Private consultant firms will continue to increase in the future and be prime users of IPM technology on behalf of the farmers they serve.

Continued Shortfall in IPM Funding for the Cooperative Extension Service

Presently there are a number of producers who are using good IPM practices, however these are only a fraction of those who could be involved. There are a range of opportunities for expanding IPM technologies. This expansion can only be accomplished through increased emphasis, with associated funding support, of CES IPM programs. The Cooperative Extension Service has an outstanding track record for development and delivery of IPM to agriculture. Federal funding of CES IPM has been constant since 1977. Today, owing to inflation, these resources are worth 50% less than they were in 1977. Every effort must be made at the federal and state level to increase funding for CES IPM programs in order to reconstruct and expand IPM in the U.S. Estimates indicate that pesticide use could be reduced by at least 50% in the U.S. using currently available technology. As new technology becomes available, it must be transferred to the producer through a strong CES program to even further reduce or in certain cases actually eliminate pesticides.

Constraints and Solutions to Wide-Scale IPM Implementation

In addition to a severe CES funding shortage, there are other constraints to implementation of IPM. By expanding CES IPM programs, local or regional constraints, such as perceived risk associated with IPM, increases in management time, demonstration of increased profitability, field demonstration of new IPM technology, and availability of trained private agricultural consultants, can be addressed through balanced IPM educational initiatives. However, there are broader factors that constrain the wide-scale implementation of IPM. Farm commodities produced under the provisions of the federal Farm Bill receive subsidies based upon yields. High yields frequently require larger amounts of pesticides and fertilizer inputs In essence the farmer is rewarded for producing high yields under chemically dependent agricultural systems. It is counter intuitive to ask farmers to accept lower yields unless it can be demonstrated that net profits can be increased or unless the provisions of the Farm Bill are such that farmers are rewarded for producing commodities under IPM and

hence less pesticide. To address this constraint, it is not unreasonable for the federal government to reward farmers for practicing IPM under the provisions of the Farm Bill through federal crop insurance incentives, more flexibility for crop rotation or by awarding additional base acreage for producing commodities under IPM. This approach cannot be successful unless IPM plans provide equal or greater net cash income relative to current production plans.

Commodities, such as fruits and vegetables, that are not considered under Farm Bill provisions could also be rewarded for adopting IPM, such as reduced rates for multiple peril crop insurance. There are no price and income supports for these crops so the government could provide additional subsidies for crop insurance, i.e., a 70% subsidy not 30%. As the trend toward the production of foods free from pesticide residues accelerates in the years to come food producers can be rewarded. Food producers would gain from IPM through reduced production costs, increased prices, and increased profits. Production costs are expected to fall as fewer pesticides are used and yields should remain constant. Prices received by farmers are expected to increase as consumer demand for pesticide-free foods increases relative to the demand for conventionally produced crops. Therefore, profits will increase as prices increase and per unit costs decline.

Another constraint to IPM adoption deals with the general public, the "consumer." While producers and processors of agricultural commodities appreciate the role IPM can play in greatly reducing or eliminating the risk of pesticide contamination of food,water, and natural resources, the U.S. consumer has little or no understanding of IPM. Developing a strong public information campaign is one approach to educating the public on the benefits of IPM. However, most of the general public does not relate to the complexities of agriculture much less IPM systems. The best approach to educating the public would be through the establishment of Urban IPM programs. Pesticides used in the urban environment may contribute to water contamination. Pesticide use also results in direct human exposure to toxic chemicals. Urban citizens can relate readily to pests that attack the structures in which they live and the landscapes that surround them. A national initiative in Urban IPM would provide a broad based public focus. The best way to educate consumers is to involve them in IPM programs for the urban environment and use these programs to not only address structural and landscape pest problems, but to educate the general public about the advantages of an IPM approach. Urban IPM programs can then be used as the vehicle for educating the public on the value of IPM in the urban environment as well as in agricultural systems.

University trained IPM specialists are necessary to expand IPM. Currently several million acres of crops are receiving IPM under the advice of private agricultural consultants. Universities must recruit top quality students and provide them with broad based, practical training in IPM to meet future increasing demands for private consultants, CES specialists and research scientists.

Safe Food, Clean Water and Wildlife Conservation: A Public Mandate

Public pressure for safe food and water and conservation of wildlife will continue to escalate. State and federal governments have and will continue to respond to this mandate through laws that require foods be produced safely and water and wildlife be protected. More extensive requirements will be placed on the registration of future agricultural chemicals to insure the public of minimal risk. Greater costs associated with chemical registration have forced the manufacturers of agricultural chemicals to carefully evaluate the markets. Chemicals for numerous food and specialty crops are considered "minor use" by the agricultural chemical industry and do not constitute a sound market investment. The number of pesticides available for all crops will continue to dwindle in the future.

The U.S. agricultural producer will be caught in a squeeze to produce safer food and fiber with less pesticides. The question is: How will this be accomplished? With the mandate to produce safer foods and to have a cleaner environment, State Agricultural Experiment Stations (SAES) and the Cooperative Extension Service have the principal responsibility to develop IPM systems that rely primarily on biological tactics.

Responding to the Mandate: A Look to the Future for IPM

Integrated pest management, like agriculture, must remain dynamic. The IPM systems developed and delivered in the next twenty years will rely to a much greater extent on biologically based IPM tactics rather than agricultural chemicals. The new IPM systems will be biologically-intensive. We propose, then, the development of ***Bio-Intensive IPM*** programs that will guarantee not only to protect food, water and wildlife from pesticides, but also guarantee profitability to U.S. agricultural producers. It is time Congress and the United States Department of Agriculture support ***Bio-Intensive IPM*** programs that will be acceptable to the agricultural community and successfully adopted.

The future course of U.S. agriculture depends on how quickly the ***Bio-Intensive IPM*** systems can be developed. A bold new step must now be taken to develop and deliver IPM systems that insure a constant and safe food supply without complete reliance upon agricultural chemicals; to ignore this precept would be foolhardy. It is important to note, however, that there are some instances where pesticides are necessary to protect human health. Mycotoxins, for example, are highly toxic compounds produced by fungi that infect grain, oil seed and other crops. The careful use of fungicides to control mycotoxin producing fungi is justified to protect human health. The Cooperative Extension Service and SAES, will need a stronger, cooperative partnership with producers, private agricultural consultants, the agricultural chemical industry, food processors, retail grocerymen, policy makers, and the general public to develop and transfer this new technology. The National Coalition on IPM is willing to lead in the development of this partnership.

Bio-Intensive IPM will rely on three primary tactics to meet its objectives: biological control, host resistance, and cultural management. These three tactics are the cornerstones on which ***Bio-Intensive IPM*** will be constructed. ***Bio-Intensive IPM*** builds on the same philosophical tenets as traditional IPM except the agricultural chemicals used in ***Bio-Intensive IPM*** must be non-disruptive and environmentally safe.

Biotechnology, along with classical breeding, will provide opportunities to alter plants and animals to be resistant to pests. Biotechnology must take advantage of ecological theory applied to agriculture to delay or prevent pest resistance to genetically engineered plants. Host resistance and biological control form a powerful combination for pest suppression. For example, if host resistance can be developed for even one key pest of a particular crop, pesticide use will be reduced and several unique opportunities will be available for biological control. Biotechnology also offers tremendous potential for genetically engineered microbial pesticides that would fit well into ***Bio-Intensive IPM*** systems.

Historically biological control has made significant advances in controlling pests in perennial cropping systems. These advances must now be extended to include greater biological control activity in annual cropping systems. As the theoretical basis for biological control in annual crops is developed and emphasis on biological control expands, more success is predicted. This challenge must be met before biological control can reach its true potential and be useful over the large acreages of annual crops grown in the U.S. Likewise, a creative, scientific revolution must take place in the area of weed control. Weed control, due primarily to high labor and fuel costs, depends most heavily on herbicides. In some areas,

conservation tillage systems have forced producers to rely even more heavily on herbicides for weed control. Some biological herbicides have been successfully developed, but more work must be done if solutions to these problems are to be found.

Cultural management options, such as crop rotation, varietal selection, planting dates, tillage practices and water and fertilizer management have provided the agronomic basis for IPM. Under ***Bio-Intensive IPM*** greater demands will be placed on cultural management requiring an increased understanding of the ecology of annual cropping systems.

Systems science will be important for developing ***Bio-Intensive IPM*** systems that meet the biological, economic and environmental objectives of modern agriculture. New tools, such as knowledge based systems, e.g., expert systems, will emerge that integrate crop, pest and economic data to provide critical management information for decision making. Field monitoring (scouting) and computerized forecasting models will continue to be used to evaluate the systems and anticipate future events upon which management decisions will be based.

The Research and Cooperative Extension Service Responsibility

The State Agricultural Experiment Stations have the unique institutional capabilities to conduct the research necessary for formulating the new ***Bio-Intensive IPM*** systems. The SAES-University partnership has traditionally been the genesis of innovative agricultural research; additionally, this partnership has trained students for the science and technology of the future. The interdisciplinary interaction necessary to develop technology for cropping systems and entire ecosystems is present. Further, SAES and CES currently interact directly with the agricultural community thus providing immediate feedback for acceptance of the innovative technology necessary for functional ***Bio-Intensive IPM*** systems.

The Cooperative Extension Service must embrace ***Bio-Intensive IPM*** as its primary educational theme. As we evolve toward ***Bio-Intensive IPM*** systems, CES must serve not only as the deliverer of technology, but must take an even more active role in bringing agricultural producers and private agricultural consultants together with the research community to plan ***Bio-Intensive IPM*** systems that are adaptable and useable in contemporary agriculture.

Of equal importance to managing pests in agriculture is the management of pests in the urban environment. Urban pesticide applications pose a threat to water quality, and the risk of direct human exposure is particularly high. Therefore, SAES and CES must also set a high priority on ***Bio-Intensive Urban IPM*** programs. These programs will allow urban citizens to relate first hand to ***Bio-Intensive IPM*** technology in their immediate environment. A priority of urban IPM programs should be not only to introduce the general public to this new approach, but also to educate them on the positive factors of ***Bio-Intensive IPM*** in agriculture. Urban citizens are the principal recipient of the benefits of ***Bio-Intensive IPM*** through the use of this approach in the urban environment, but equally important, through higher quality food and fiber produced for their consumption by the agricultural sector with less pollutive technology.

The Responsibility of Higher Education

Trained personnel are necessary for future expansion of IPM. Integrated pest management requires broad training in all phases of crop production and management. It is the responsibility of the universities to develop well balanced IPM curricula at the B.S., M.S. and Ph.D. levels to attract the highest quality students into IPM. The universities must become more aggressive in promoting career opportunities in IPM.

The Responsibility of the Private Consultant and Pest Control Companies

The responsibility of large-scale implementation of ***Bio-Intensive IPM*** will be shared with private agricultural and urban (pest control operators and lawn care managers) consultants. ***Bio-Intensive IPM*** will require a high level of management and thus create a greater need for knowledgeable agricultural and urban consultants in the future. The Cooperative Extension Service, working with the research community, private consultants, the farmer and home owner can design, test and evaluate ***Bio-Intensive IPM*** systems; however, the widespread transfer of this technology across the U.S. will require a stronger partnership between private consultants and the agricultural and urban communities.

The Agricultural Producer's Responsibility

Progressive producers of agricultural commodities have already recognized the need to restrict the use of agricultural chemicals. Individual producers and the associations that represent them have been strong supporters of IPM. As we move toward the future, the link between producers and ***Bio-Intensive IPM*** programs must be expanded and strengthened. As farm size continues to increase, there is an increased focus on efficient management. The successful farmer of today, and in the future, must be sophisticated and fully capable of assisting research and CES in setting realistic research objectives that will lead to ***Bio-Intensive IPM***. Early involvement of producers in the development of technology will greatly increase the probability of farmers accepting this technology when it is available.

The Responsibility of the Agricultural Chemical Industry

Perhaps the greatest industrial challenge for innovative and creative work in ***Bio-Intensive IPM*** resides with the agricultural chemical industry. The industry has already taken a leadership role in the development of effective, environmentally safe and non-disruptive pesticides. The advances in microbial pesticides, pest growth modifiers and low-residue, safe conventional pesticides are evidence that the industry is responding to the need. The industry has made a major investment in biotechnology and substantial initial progress has already been made in the area of host plant resistant and genetically engineered microbial insecticides. In light of greater costs for pesticide registration, pesticide resistance, and increasing public concern over the adverse effects of pesticides, the agricultural chemical industry must accelerate research and development of biorational pesticides. Further, the industry must anticipate the development of pesticide resistance, a continual concern. The industry should reexamine its marketing strategy and collaborate with population geneticists to develop resistance management schemes for agroecosystems. Such schemes would prolong the useful life of biorational pesticides by preventing immediate selection for resistant organisms.

The Responsibility of Food Processors and Retail Grocers

The cosmetic standards for fresh market produce and some processed food are frequently far stricter in the market place than required by Food and Drug Administration standards. Strict cosmetic standards set by food processors and the retail grocery industry, as well as grower marketing orders place a burden on the farmer to produce blemish free products. To meet the market's cosmetic standards the producers must use multiple applications of pesticides. Multiple pesticide applications increase the probability of residues on food and also lead to pesticide resistance. Pesticide resistance and declining availability of minor use pesticides clearly indicates that it will be more and more difficult for farmers to meet pesticide-aided cosmetic standards.

The food processing and the retail grocery industry must examine their cosmetic standards. If the standards can be relaxed without loss in food quality, the window of opportunity can be significantly expanded for developing revolutionary ***Bio-Intensive IPM*** programs. Also, retail grocers should take leadership in educating the consuming public about the benefits of ***Bio-Intensive IPM***. There is a definite perceived reward to the retail grocer that provides food which contain little or no pesticides. The consuming public would welcome such information.

Federal and State Government Responsibility

Federal and state governments are responsive to the needs of the general public and the mandate to provide a safe supply of food and water and to conserve wildlife. Federal government could provide a reward to the producer for producing crops under a ***Bio-Intensive IPM*** system. There are pressing and urgent needs for increasing funds for CES IPM programs in order to utilize IPM technology that is immediately available. Increased funding for CES IPM programs is the first step toward a successful ***Bio-Intensive IPM*** system. A segment of these funds should be dedicated to ***Bio-Intensive Urban IPM*** programs to accelerate the education of the American consumer with regards to IPM which will serve to decrease human pesticide exposure. The Environmental Protection Agency and USDA/Cooperative States Research Service must increase funding levels to the SAES as the first significant step in developing ***Bio-Intensive IPM*** programs for agriculture and the urban environment. Funding of these programs would send a clear signal that the federal government is responding to the public mandate for better human health by funding programs that will provide safe food and water, and conservation of natural resources.

Likewise, state government can also respond to the public mandate. A few states have already taken the initiative by increasing SAES and CES funding in the area of IPM. These state governments see the many successes and the potential of IPM for their citizens. The ultimate solution to the current agricultural and urban malady lies in strong SAES research and effective IPM educational programs provided by CES.

The Consumer's Responsibility

Consumers must recognize the public and personal costs associated use of less pesticides. The consuming public must support federal and state expenditures to develop and deliver ***Bio-Intensive IPM*** programs. When informed, the consumer has been supportive of IPM. Their support is even more important as we move into the future with the new bio-intensive programs. Consumer attitudes toward commodities produced under a pesticide umbrella are changing. The past public perception is that foods produced in this manner are free of pest fragments and have virtually no blemishes. The commodities produced under ***Bio-Intensive IPM*** will also produce safe and wholesome food and still maintain pest fragments and blemishes at innocuous levels for most consumers. The trade off is not a teeter-totter where a substantial reduction in pesticide residues is balanced by a significant rise in cosmetic problems at the consumer level. This is an acceptable situation. It only means that CES and the retail grocery industry must form a closer partnership to educate the general public.

In Conclusion

Maintaining a safe food and water supply is the responsibility of agricultural producers, the agricultural chemical industry, commodity handlers, food processors, the retail grocers, and the consumer. Federal and state governments must support expanded implementation of IPM through increased funding to CES. The research base for future Bio-Intensive IPM systems must be broadened in the State Agricultural Experiment Stations. The private consultant must join with CES and the producer to move forward with broader implementation of IPM systems. The National Coalition on IPM on behalf of the agricultural community is willing to form a solid agricultural industry-government partnership to achieve the goal of IPM implementation. A safe food and water supply, as well as a healthy environment, is the public mandate.

—The National Coalition on Integrated Pest Management—

Working for Safe Food, Clean Water and Wildlife Preservation

Through

Expanded Implementation of Integrated Pest Management

The National Coalition on Integrated Pest Management, representing growers, farmer associations, commodity groups food processors, food marketing interests, pest control operators, private agricultural consultants and environmental interest groups and consumers is addressing the problem of food safety, water quality and wildlife preservation through expanded implementation of integrated pest management (IPM) programs. The Coalition firmly believes that IPM systems based on biological control, host resistance, cultural management tactics, and the safe use of pesticides will lead directly to safer food, cleaner water and preservation of wildlife. In order to achieve the goal of safe food, clean water and wildlife preservation, the National Coalition on Integrated Pest Management recommends and strongly supports increased federal funding for the Cooperative Extension Service IPM Programs. The Cooperative Extension Service has an existing organizational framework and an outstanding track record in the transfer of IPM technology to producers of U.S. commodities. Therefore it is recommended that United States Department of Agriculture IPM funding be increased to the following levels :

Technology Transfer

Cooperative Extension Service
USDA Smith-Lever (3d): $ 30 million — Agricultural IPM
2 million — Urban IPM

TOTAL $ 32 million

The National Coalition on Integrated Pest Management will work as a partner with the United States Congress and USDA in meeting the national mandate for safe food, clean water and wildlife preservation through IPM.

TUESDAY, MARCH 27, 1990.

FDA

WITNESSES

NOEL BUTERBAUGH, HEALTH INDUSTRY MANUFACTURERS ASSOCIATION
RICHARD D. GODOWN, INDUSTRIAL BIOTECHNOLOGY ASSOCIATION
GERALD J. MOSSINGHOFF, PHARMACEUTICAL MANUFACTURERS ASSN.
ROBERT BRITAIN, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
DANIEL F. O'KEEFE, JR., NONPRESCRIPTION DRUG MANUFACTURERS ASSOCIATION

Mr. WATKINS. Next we have the panel of Noel Buterbaugh, Richard Godown, Gerald Mossinghoff, Robert Britain, and Daniel O'Keefe. It looks like the health industries are well represented.

Mr. Buterbaugh, are you going to be the first witness?

Mr. BUTERBAUGH. Yes, sir.

Mr. WATKINS. I think most of you know that all of your written testimony will be part of the record. Please summarize. We will go from one person to the next and take all of the testimony at this time.

Mr. Buterbaugh?

Mr. BUTERBAUGH. I am Mr. Buterbaugh. Good afternoon, Mr. Chairman and members of the subcommittee. My name is Noel Buterbaugh. I am president of Whittaker Bioproducts, Inc., a medical technology company that makes high-tech diagnostic kits to detect diseases such as rubella and lyme disease.

I am also a director of the Health Industry Manufacturers Association, and I am here representing that association today in support of increased appropriations for the Food and Drug Administration, an appropriation of $730 million, without the imposition of user fees.

My written testimony, as you said, is already provided.

First, I want to thank the subcommittee for its past support. Because of your help, the agency has made progress in shortening review times. But an increasing number of new product applications threatens to wipe out that progress. Some products on the cutting edge of science and medical advancement still wait as long as several years for FDA approval. Meanwhile, patients are deprived. They should have rapid access to medical innovations that can save or enhance their lives. They should not have to wait for these products because of a lack of resources at the FDA.

Further, slow product review acts as a drag on competitiveness in our industry. The U.S. medical products exports increased by approximately 15 percent in 1989, with a $1.7 billion trade surplus in these products. This strong performance of the medical products industry is dependent upon a regulatory environment where companies an introduce innovations rapidly. Increased resources are called for if the FDA is to keep pace with this environment, but these resources should come from additional public funding, not from user fees.

User fees are really taxes on competitiveness and innovation. They would act as a strong disincentive—especially for smaller en-

trepreneurial companies that do most of the innovating. Moreover, user fees raise troubling questions about the possible conflict of interest involved when a public regulatory agency derives substantial funds from the industry that it regulates.

Without user fees, the Administration's budget request amounts to a serious reduction in resources for the FDA at a time when the FDA needs more, not less, help to fulfill its mandate. We are asking you to give the FDA that help.

Thank you. I will be happy to answer any questions.

Mr. WATKINS. Thank you.

Next? Please state your name.

Mr. BRITAIN. Good afternoon, ladies and gentlemen. My name is Robert Britain. I am manager of the Diagnostic Imaging and Therapy Systems Division of the National Electrical Manufacturers Association. Our association focuses on diagnostic imaging medical devices.

On behalf of NEMA, I wish to express opposition to the user fee proposal contained in the President's fiscal year 1991 budget submission for the Food and Drug Administration. Supporters of the User Fee Concept contend that user fees are the only way for the FDA to garner the resources necessary to efficiently fulfill its important mission of protecting the public health and safety.

We take exception to this view. Rather, we contend that a user fee system will diminish any incentive for the FDA to engage in a more efficient review of medical devices.

Since the user fee proposal, as currently structured, rests upon the costs incurred by the FDA as a result of the product approval process, the greater the resource expenditure associated with the product approval process, the greater the user fee collected by the agency.

This results in a situation in which the agency has no particular incentive to control product approval costs since these costs are recouped from the industry. Clearly, this is a situation which would lead to increased inefficiency in the FDA product approval process.

In addition, we are concerned about the manner in which user fee revenues would be distributed within FDA. For example, FDA estimates user fee revenue from new device applications at about $16 million. By contrast, actual program increases for device review are estimated at only $2.5 million. This means that 85 percent of the user fee revenue collected from device manufacturers will be used to fund existing FDA programs and will, therefore, offset existing FDA expenditures. Thus, it is readily apparent that device manufacturers will see only a fraction of the revenues expended on FDA user fees translated into a more expeditious review process for medical devices.

Finally, we, at NEMA, believe that in many ways the very nature of medical technology is incompatible with the user fee concept. Oftentimes the pact of technological innovation is so rapid as to require the submission of separate 510(K) applications for each incremental change in product design. Under the terms of the user fee proposal, a user charge would be assessed for each separate submitted application. The end result of such an approach is the imposition of a user fee following each technological improvement made

over the life cycle of a product. The deleterious impact of this scheme of incremental taxation is readily apparent.

These are but a few of the issues which must be addressed as this subcommittee begins to consider the user fee proposal.

Mr. Chairman, I thank you for the opportunity.

Mr. WATKINS. Thank you, Mr. Britain, very much.

Next?

Mr. GODOWN. Mr. Chairman, I am Dick Godown with the Industrial Biotechnology Association. It is user fees that are on our mind, too.

We feel that any proposal to offset budget cuts by adding a user fee would negatively impact future research and development by increasing new drug development costs. Of special concern to the biotechnology industry is its effect on small companies, for which user fees are most likely to be truly burdensome.

To require a payment of a user fee is an unwarranted burden that must be added to the already high cost of research and development which falls so heavily on the small companies in our industry.

Technology progress will lead to economic growth and development for the United States both here and in the international markets, and we believe the government must encourage the pioneer spirit of entrepreneurism that plays such an important role in the development of science and technology.

This Administration has sought to encourage the development of small businesses and has identified biotechnology as one of the three most exciting frontiers now being explored to unlock the secrets of life for the benefit of all. This proposal would stifle that.

FDA acts for the public and not for the industries it regulates, and it is the public which realizes the major benefits from its review, approval, and surveillance activities. These should be carried out at whatever level is reasonable and necessary and not at a level established by determining what amount of financial burden the industry can carry.

To conclude, Mr. Chairman, the IBA supports increasing FDA funding by $45 million to a total of $730 million, but not by user fees.

Thank you for the opportunity to appear.

Mr. WATKINS. Thank you very much.

Next?

Mr. MOSSINGHOFF. Mr. Chairman, my name is Gerry Mossinghoff. I am the President of the Pharmaceutical Manufacturers Association. We associate ourselves with the views you have heard here.

Prompt approval by the FDA of new drug applications, drugs for AIDS, Alzheimer's disease, cancer, stroke, heart disease, and you name it—there are still so many uncured diseases that need the work of our industry.

We request full funding for the FDA. We request that the funding actually be increased to $730 million without the imposition of user fees.

Thank you, Mr. Chairman.

Mr. WATKINS. Thank you.

You must be Mr. O'Keefe?

Mr. O'KEEFE. Right. Mr. Chairman, I am Dan O'Keefe, Senior Vice President and General Counsel of the Nonprescription Drug Manufacturers Association. We represent cold products, pain relievers—products like Tylenol and Vicks. You have them in your medicine cabinet at home.

Our association represents about 95 percent of those products sold in the United States.

Let me say just one word about the Food and Drug Administration, Mr. Chairman. It is, as you well know, one of the most important regulatory agencies in the country. We fully support it, and we support full funding of the FDA. Our disagreement with the Administration, as in the case of my colleagues, is not with the amount of funding for the FDA— it should be well-funded; it is with the question of user fees. We strongly oppose user fees. We must disagree with that.

We believe this committee has been very wise for the past several years. It has been rejecting user fees. We associate ourselves with the thinking in that direction.

From our particular industry's standpoint, user fees could operate as a barrier to switch. Switch is the orderly process by which prescription drugs are transferred to over-the-counter status if they are safe enough to do so in appropriate situations. Ibuprofin is one, Advil and Nuprin are the names of the products. We are very concerned that if user fees were placed, that would operate as a barrier to the movement of such products to over-the-counter status and, therefore, would penalize both consumers and the medical budget of the United States Government, as well.

Thank you very much, Mr. Chairman.

Mr. WATKINS. Thank you. I wish time allowed me to go into detail with you about this because we do have a philosophy on user fees. This issue has been coming up every year and this committee has prevented user fees from happening. I might get political here for just a moment, but it seems like it is not very important who people elect except when it comes to the time they are here before us and proclaim woe is on me.

I share that with you because I get frustrated, as one who recognizes exactly what you are saying about the impact of user fees. Then we find that year after year we have the Administration coming up and proposing the use of user fees.

It means that in order to try to do what you want we have to cut some other very, very needed programs. And then we see, a lot of times, a forgotten situation after you get that taken care of. It is a frustrating situation. I could get on my soap box about that but maybe I had better not because I have got to try to get us back on schedule.

Thank you very much for coming.

You have got some good people working for you. I have known some of them for a long time.

[The prepared statement of the witnesses follow:]

health industry manufacturers association hima

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STATEMENT

BY

NOEL BUTERBAUGH
PRESIDENT
WHITTAKER BIOPRODUCTS, INC.

REPRESENTING THE

HEALTH INDUSTRY MANUFACTURERS ASSOCIATION

ON

FY 1991 BUDGET
OF THE
FOOD AND DRUG ADMINISTRATION

BEFORE

THE COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE
AND RELATED AGENCIES

U.S. HOUSE OF REPRESENTATIVES

MARCH 27, 1990

Mr. Chairman and members of the Subcommittee:

My name is Noel Buterbaugh. I am President of Whittaker Bioproducts, Inc., a medical technology company that makes high-tech diagnostic kits to detect human rheumatic and infectious diseases such as rubella and lyme disease. Early detection of these diseases results in prompt treatment which improves the chances of total recovery and may even save lives. I am also a member of the Board of Directors of the Health Industry Manufacturers Association (HIMA), and I am representing HIMA today in support of increased appropriations for the Food and Drug Administration (FDA).

HIMA is a trade association that represents more than 330 companies that manufacture medical devices, diagnostic products and health information systems. Two-thirds of the member companies are smaller businesses with annual domestic sales of less than $20 million.

This will be the fifth year that HIMA has had the privilege of coming before your subcommittee to ask for increased funding for the FDA. We want to thank the subcommittee for its past support. Because of your help, the agency has made progress in meeting its increasing responsibilities in protecting the public health. But the progress has been hard won and incremental.

In the important area of reviewing pre-market applications for medical devices, the agency appears to be treading water rather than sprinting forward. In FY 1989, the review times for pre-market approval applications (the most stringent form of FDA review) dropped to an average of 247 days, a significant improvement over the previous year's average of 270 days. However, 26 additional pre-market approval applications are expected to be submitted to the agency during the present fiscal year--or a total of 110--and the same number of applications is anticipated for FY 1991. Accordingly, review times are expected to increase by 23 days--effectively wiping out the previous gains. The point is that in almost every category of review, the number of applications is increasing faster than the ability of the agency to keep pace, and certainly faster than its ability to continue to make improvements in reducing review times.

Some of you on the committee may be asking yourselves what difference a few days or even a few months makes in approval times. In the first place, you must understand that these are averages. Some products, contact lens solutions, for instance, generally win approval very rapidly. But many other products--especially those on the cutting edge of science and medical advancement--wait much, much longer, some as long as several years.

These delays affect health care by depriving patients of state-of-the-art medical technology. Patients need medical products that are safe and effective, but they also have a right to timely access to medical innovations. I believe that it is unacceptable

to the American people--and I hope it is unacceptable to this subcommittee--that patients have to endure long waits for the fruits of medical research because the government simply does not have adequate personnel to review applications.

In addition to its impact on patient care, slow product review can act as a drag on the competitiveness of our industry and the economic health and well-being of our nation. One reason that FDA is having a difficult time keeping up with new product review is because of the tremendous pace of innovation in medical technology. The U.S. Industrial Outlook for 1990 predicts that medical products and other high-tech industries will dominate growth in U.S. manufacturing and service industries in 1990. The Department of Commerce estimates that medical products exports increased by approximately 15% in 1989, with the U.S. trade surplus in these products increasing more than 100%, to $1.7 billion. We are a healthy industry, contributing to the health of our people and our nation.

But the strong performance of the medical products industry, and its competitiveness in world markets, is dependent upon a regulatory environment where companies can continue to innovate and introduce these innovations rapidly. Any substantial change in the U.S. regulatory environment (such as a slowdown in product review times) could significantly alter the growth projections for 1990 and for future years.

Let me just give you one example relating to my own company. We are involved in the development of so-called combination/hybrid devices. A hybrid device is a product that contains components of both a drug and a device. I believe that this extremely innovative technology is clearly the wave of the future. The FDA is experiencing difficulty in devising a regulatory scheme that will deal with such products efficiently and effectively without a lot of duplication or inconsistency in requirements. Meanwhile, many such devices gather dust at the FDA while our competitors in Japan and Western Europe beat us to the world market. Although it is not the responsibility of the FDA to promote U.S. industry, its actions--or inactions--should not impede U.S. competitiveness. FDA needs to make a regulatory system for hybrid devices a priority and to devote sufficient resources to this goal. This is not an issue of safety or effectiveness; it is an issue of priority and funding.

I believe it would be appropriate at this point to say a few words on the subject of user fees. User fees on the product review process are really taxes on competitiveness and innovation. Their effect would be to weaken the industry's position as the world leader in medical technology.

It is the smaller, entrepreneurial companies in our industry that do the most innovating. Many of these start-up firms export their innovative products all over the world. But these smaller companies tend to operate on tight budgets. Almost all of their resources are devoted to research and development--and to the

lengthy clinical trials that are required before an application is even submitted to FDA. Then, they are subject to months and sometimes years of scrutiny by the agency before they can introduce their product and recoup some of their investment. An additional fee estimated at close to $100,000.00 per pre-market approval application--before the first product can be sold--could tip the balance in favor of a decision not to develop the new product. That kind of disincentive could have a very negative impact on innovation in this industry.

Moreover, user fees raise troubling questions about the possible conflict of interest involved when a public, regulatory agency derives substantial funds from the private sector that it regulates. We believe that it would be in the interest of good government to avoid such conflicts of interest---or apparent conflicts of interest--by supporting the agency out of appropriated funds.

The Administration's proposal for an "increase" in funding for the FDA is built on a fiction--a non-existent user fee on various types of product review activities. Without user fees (which have never been considered for the FDA by the Congress), the Administration's request amounts to a serious reduction in resources for the FDA.

This comes at a time when there is a growing recognition by everyone (except the Administration, apparently) that FDA needs more, not less, help in fulfilling its mandate. The need for automation and state-of-the-art equipment, the need to attract and retain qualified scientific personnel, the need for adequate facilities--all of these are well documented requirements that cry out for increased funding. The FDA Council, an organization of companies and associations concerned about the FDA, is recommending an appropriation of $730 million, without the imposition of user fees. HIMA supports this funding level.

Mr. Chairman, we are well aware of the severe budget constraints under which you are operating, and we realize how difficult it will be to fund such a significant increase. Nonetheless, we believe that the increase is justified. Such an increase, however, ought to be coupled with a corresponding commitment from the agency to continue a process of critical self-evaluation and to devise management programs that will increase efficiency and maximize the use of this additional funding so that real gains are made.

We thank you again for this opportunity to express our views. I will be happy to answer any questions.

Statement

Pharmaceutical Manufacturers Association

GERALD J. MOSSINGHOFF

PRESIDENT

PHARMACEUTICAL MANUFACTURERS ASSOCIATION

ON

THE FISCAL YEAR 1991 BUDGET ESTIMATES

OF THE FOOD AND DRUG ADMINISTRATION

SUMMARY OF PREPARED TESTIMONY

MARCH 27, 1990

Mr. Chairman and Members of the Subcommittee:

I am Gerald J. Mossinghoff, President of the Pharmaceutical Manufacturers Association. I have a very brief summary statement and request that the text of my complete statement be included in the Subcommittee's hearing record files.

Prompt approval by the FDA of New Drug Applications is absolutely essential to the health of the American people and to the continued ability of the pharmaceutical industry to discover and develop new medicines. Therefore, we strongly support appropriation of the full sums necessary to carry out the programs outlined in the President's budget, together with an

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additional $45 million to address acute resource needs of the Agency.

At the same time, we urge the Subcommittee -- as it has done over the past several years -- to reject the Administration proposal to offset appropriations by imposing $157 million in so-called user fees or taxes on innovation. FDA regulatory activities are statutorily mandated for the protection and safety of the general public -- not for the benefit of the regulated industries.

Without user fee receipts, the Administration actually is proposing a major budget cut of $59 million, or 10 percent, from current-year appropriations for FDA. This cutback would be imposed at a time when new drugs are urgently needed -- for AIDS, Alzheimer's disease, cancer, stroke, heart disease, and many other diseases. The research-based pharmaceutical industry is totally committed to discovering and developing these urgently needed new medicines. The proposed budget cut would constitute a major set-back in the midst of dramatic and extensive developments and investments by pharmaceutical companies in the application of biomedical research to conquer these diseases.

With this amount of research in the pipeline, it is critically important that the FDA be equipped to handle the work. The full budget request of $685 million should be approved for FDA in FY 1990 by appropriations and without resort to user fees, together with an additional $45 million to address basic resource needs that have been too long deferred -- renovation of

facilities, replacement of laboratory equipment, and restoration of FDA's professional staff resources.

Thank you, Mr. Chairman. That concludes my summary statement. I will be pleased to answer any questions you or other members of the Subcommittee may have.

Statement

Pharmaceutical Manufacturers Association

GERALD J. MOSSINGHOFF
PRESIDENT

PHARMACEUTICAL MANUFACTURERS ASSOCIATION

ON
THE FISCAL YEAR 1991
BUDGET ESTIMATES OF THE FOOD AND DRUG ADMINISTRATION

FOR THE

SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

COMMITTEE ON APPROPRIATIONS

U.S. HOUSE OF REPRESENTATIVES

MARCH 27, 1990

Mr. Chairman and Members of the Subcommittee:

I am Gerald J. Mossinghoff, President of the Pharmaceutical Manufacturers Association. PMA represents more than 100 research-based pharmaceutical companies that discover, develop and produce most of the prescription medicines used in the United States. I appreciate this opportunity to appear before the Subcommittee and testify on the Administration's Fiscal Year 1991 appropriations for the Food and Drug Administration.

Prompt approval by the FDA of New Drug Applications is absolutely essential to the health of the American people and to the continued ability of the pharmaceutical industry to discover and develop new medicines. Therefore, we strongly support appropriation of the full sums necessary to carry out the programs outlined in the President's budget ($685 million), together with an additional $45 million to address acute resource needs of the Agency. At the same time, we urge the Subcommittee to reject the Administration proposal to offset appropriations by imposing $157 million in user fees -- a proposal that would result in a tax on innovation without corresponding benefit.

FDA is a vital national resource, but the central, incontestable fact today is that this agency simply does not have the resources to do the jobs expected by the American people and mandated by Congress, not only in the Federal Food, Drug, and Cosmetic Act, but under some 23 new laws passed by Congress just

in the last decade.

In a September 1989 study, the General Accounting Office sharply defined the critical problems of inadequate facilities, scientific equipment, and staff resources confronting FDA. They are:

o A number of FDA's laboratories fail to meet acceptable standards.

o 29 percent of FDA's scientific equipment, which originally cost over $80 million, should have been replaced.

o The space occupied by FDA staff is far below the amount prescribed by General Services Administration standards.

o The high vacancy rate in Senior Executive Service positions has resulted in serious delays in the review of health products. The professional staffing shortfall can become even more critical at FDA within a few years, when three-fourths of the senior staff will be eligible to retire.

o Over the past decade, there has been a major decline in general staff resources, while the Agency's funding level, in constant dollars, remained practically unchanged.

Additional problems recently reported by FDA include the following:

o The substantial diversion of staff resources from ongoing essential operations to handle emergencies or respond to new urgent priorities has become a serious problem at FDA.

o Major developments in biotechnology promising new products for the treatment, diagnosis, and prevention of many diseases have confronted FDA with the necessity of establishing entirely new scientific analysis capabilities with trained staff and laboratory resources.

These facts clearly demonstrate that FDA confronts an urgent requirement for substantially increased appropriations right now beyond the Administration's budget request.

As a first step, we urge full restoration by Congress of $157 million in appropriations for FDA in lieu of the user fee receipts proposed by the Administration. We strongly believe that the Administration's plan to meet, through user-fee receipts, one-fourth of the budget of FDA -- an agency which is of such vital importance to the health and safety of all the American people -- is completely unrealistic and unjustifiable,

and constitutes fundamentally bad public policy.

From a practical standpoint, it is unrealistic to assume that $157 million in user fees could be collected in the next fiscal year. No consideration is given to the prerequisite of special authorizing legislation, recognized by the Administration in its budget request. Congress did not act on similar legislative proposals submitted by the Administration in 1987 and 1989. Without this statutory authorization, the user-fee receipts, under current Federal policy, would never be credited to FDA but would be deposited in the general revenue at Treasury.

Second, no justification is provided for the proposed level of user fees. The estimate is not the result of a detailed study, as required under general user charge policy. Instead, what is put forward is alleged to be an estimate of the total costs of the product-review activities for which user fees are proposed to be charged.

Why, then, have the estimates of total user-fee receipts from New Drug Applications risen from $18.9 million in the 1985 regulatory proposal by FDA (50 F.R. 151, August 6, 1985) to a reported $58 million in the Administration's budget proposal for Fiscal Year 1991 -- in the absence of any increase in total annual New Drug Application reviews during this period?

The answer is that the user-fee receipt estimates bear no direct relationship to costs but are primarily an arithmetical contribution to general Government budget deficit reduction targets. These are not user fees -- rather, they are a new tax!

This brings me to our fundamental objection to FDA user fees -- namely, that they are, in fact, a new tax, and they constitute bad public policy.

The FDA product review activities for which this tax would be imposed are not voluntary -- a basic requirement to justify user fees under current Federal policy. Instead, they are required by law for the public benefit. The only private benefit -- the second criterion for allowing user fees to be charged -- that is received by regulated companies in the approval of health products premarketing applications is that they are allowed to remain in business.

Meanwhile, the alleged benefit of a so-called "seal of approval" by FDA on these products is discounted by the reality that the law prohibits any indication of such "approval" in the advertising or labeling of these products. Moreover, FDA approval has not provided a defense, on the whole, from State

product-liability laws to a manufacturer based on compliance with Federal Government standards of safety and efficacy.

We also strongly believe that the new tax proposed by the Administration is bad public policy. It is bad pubic policy to have the salaries of government regulators paid for by the regulated industries. This can undermine public confidence in the impartial administration of our food and drug laws. That is precisely a major issue currently confronted by FDA, and it can only be worsened by such a perception of preferential treatment which would follow from such a scheme.

The FDA itself, in a 1983 User Charge Study, concluded that user fees could "entail or lead to appearances of conflict of interest and to an unstable operating environment if FDA's appropriations were reduced and the Agency were made directly dependent upon receipts from the regulated industry."

Moreover, this would be the worst kind of tax because it would be imposed as an extra cost of industry research and development. By imposing an innovation tax on the premarketing review of human drugs, biologics, medical devices and other products for patient care, the Administration's proposal will undercut a priority policy emphasized in the budget on investing for the future. It is in direct conflict with policies and incentives to encourage additional research and development in American industry.

The Administration's proposal places a heavy burden on small high-technology firms that are creating many of today's most exciting developments in medical science as in the field of biotechnology, in which America currently exercises world leadership. High user fees could discourage such firms from pursuing innovative research because they lack the financial resources to pay such fees. It is reported that the review of each new drug under the Administration's proposal would cost between $300,000 and $400,000; the fee for review of a new device application would be about $100,000.

It is clear that most of the substantial revenues from these high user fees would replace appropriated funds with only about one-third of these revenues going for program improvements. This would be true even if the required special authorizing legislation, which I have previously discussed, were to be enacted to permit the crediting of receipts to FDA rather than depositing them in the General Revenue Fund.

By including anticipated but highly uncertain receipts from user fees, the proposed Fiscal Year 1991 budget for FDA is presented as an increase of $98 million over current-year

appropriations ($587 million). However, only $53 million would be applied to actual increases or improvements in FDA programs. We are particularly concerned that the research-based pharmaceutical industry, which would be assessed an estimated $58 million in user fees, would see only $2.5 milion channeled to support direct improvements in the new drug evaluation process.

Actually, the Administration is proposing a major budget cut of $59 million, or 10 percent, from current-year appropriations for FDA. This reduction in budget authority would be imposed at a time when new drugs are urgently needed for AIDS, Alzheimer's disease, cancer, stroke, heart disease and many other diseases. It would constitute a major set-back in the midst of dramatic and extensive developments and investments by pharmaceutical companies in the application of biomedical research to conquer these diseases.

Discovering and developing safe and effective new medicines is a long, difficult and expensive process. The research-based pharmaceutical industry will invest $8.2 billion in research and development this year, and that investment has been doubling every five years. The current ratio of U.S. pharmaceutical R&D expenditures to sales and exports --- 16.8 percent -- is believed to be the highest among all industries.

In conclusion, Mr. Chairman, we fully support the increase proposed in the FDA budget for Fiscal Year 1991, but as direct appropriations on the basis of which there can be effective planning. We also believe there is an urgent requirement for an additional $45 million to address basic resource needs that have been too long deferred.

Over the last several years, Congress has responded to the recommendations of this Subcommittee to address FDA's resource requirements by enacting increased appropriations beyond Administration budget requests. Congress also has consistently rejected user-fee proposals for regulatory activities statutorily mandated for the protection and safety of the general public and which already involve major compliance costs for the regulated industries. I urge that this policy be reaffirmed by Congress as it acts on FDA's FY 1991 budget.

Mr. Chairman, that concludes my prepared statement. I will be pleased to answer any questions you or other members of the Subcommittee may have.

STATEMENT

By

Daniel F. O'Keefe, Jr.
Senior Vice President and General Counsel
Nonprescription Drug Manufacturers Association

Before The

Subcommittee on Rural Development, Agriculture
and Related Agencies

Committee on Appropriations

United States House of Representatives

March 27, 1990

Mr. Chairman and Members of the Subcommittee, I am Daniel F. O'Keefe, Jr., Senior Vice President and General Counsel of the Nonprescription Drug Manufacturers Association (NDMA). I am pleased to be a member of this panel which has been invited to present testimony on the Administration's proposed budget for the Food and Drug Administration (FDA).

The Nonprescription Drug Manufacturers Association is the 109-year old trade association representing manufacturers and distributors of nonprescription, over-the-counter (OTC) drugs, such as pain relievers, cold tablets, cough syrups, and many others, some of which you probably have in your medicine cabinet at home. Many of these medicines are among the most commonly used consumer products in the United States, such as Tylenol, Bufferin, Tums, Vicks, and Bayer Aspirin.

NDMA members -- both large and small companies -- account for approximately 95 percent of the sales of OTC medicines in the United States.

First, Mr. Chairman, let me say a few kind words about the Food and Drug Administration. It is one of the most significant regulatory agencies in our country. It has the tough job of protecting the nation's health by assuring that there is a constant supply of safe and effective drugs, as well as pure foods. The Agency has done an excellent job in carrying out its mandate of protecting the nation's health.

The Administration's request for FDA in Fiscal Year 1991 is for $685 million. We are aware that FDA faces important challenges now and we believe the Agency should be fully funded by tax dollars.

The Administration proposes that $157 million of the Fiscal Year 1991 budget be funded by the imposition of user fees for product reviews. This proposed fee would be paid by companies and charged by FDA for processing applications before the Agency. It would be a charge by the Agency for determining the safety and effectiveness from the public interest standpoint of petitions or applications before it. The $157 million user fee total includes $103 million for human drugs -- $58 million for new drug products, plus $45 million for generic drug product approvals. Last year, the Administration proposed $570 million in total funding, including $100 million in user fees. Congress, as members of this Subcommittee know, rejected the $100 million in proposed user fees and restored the full $570 million.

Mr. Chairman, in rejecting user fees Congress has acted on the wise advice of your Subcommittee which has considered and rejected user fees for several years as part of the appropriation process.[1] For example, last year, it flatly instructed the Administration <u>not</u> to propose user fees again. Your Subcommittee report accompanying the FDA's appropriation bill states:

(next page, please)

"For the Food and Drug Administration the Committee provides an appropriation of $550,171,000, an increase of $62,827,000 above the appropriation for fiscal year 1989 and $107,500,000 above the budget request. The Committee points out the comparisons are inappropriate since the budget request reflects unrealistic collections of $100,000,000 for user fees. These user fees require specific authorization which is not now available. In the future, the Committee expects the Department of Health and Human Services to submit its budget request based on current law. If the Committee concurred with the budget request, thousands of people would suffer from the inability of FDA to inspect and monitor the safeness of our food supply; review and approve life-saving drugs, biologics, and medical devices; and perform many other health related activities." (House Report 101-361 at 126).

Last year was not the only time the Subcommittee considered user fees. In fact, Mr. Chairman, your Subcommittee each year since 1985 has specifically rejected user fees as a funding mechanism for FDA. This has been reflected in each Subcommittee report. Last year in written testimony before your Subcommittee I provided you with this report language since 1985. I will not repeat this for the sake of time. However, the written record demonstrates the resolve of the Subcommittee against user fees based on the clear and convincing rationale that the New Drug Approval process provides a public benefit. The Nonprescription Drug Manufacturers Association agrees with the Committee that the NDA process provides a direct public benefit and, as such, should not be burdened with user fees.

The New Drug Approval process is mandated by Congress through the Food, Drug, and Cosmetic Act. It protects and benefits the public by establishing a rigorous examination and approval procedure prior to marketing of new drugs. The system is designed to protect and benefit the public. As Congress has recognized on so many occasions, it is conceptually wrong to ask industry to pay for it.

Mr. Chairman, in addition to general reasons against user fees, some of which are noted by my colleagues on this panel, from the standpoint of the nonprescription drug industry, we believe this charge, which we call a "Research and Development Tax", is particularly inappropriate for two reasons:

Deterrent to Switch

First, consumers benefit from the switch of proven-safe prescription drugs to nonprescription status. The switch of these drugs is frequently accomplished through the NDA process. The availability of these OTC products contributes to the nation's health care system by reducing health care costs to the consumer and to the government through medicare expenses. A tax

(next page, please)

imposed on companies considering use of the NDA system to request FDA to switch a drug from prescription to nonprescription status obviously would discourage that approach by making it more expensive. It would adversely affect small companies proportionately harder than larger ones.

Any artificial deterrent to the switch process would be a particularly bad result because the United States is already in danger of approaching a "self-care drug lag." Consumers in other countries are having made available to them even more products than FDA has to date made available for Americans. In Denmark, for example, since March 1989, consumers have been able to purchase OTC cimetidine for treatment of ulcers. Americans cannot. In Britain, Denmark and Sweden, consumers can buy 1% hydrocortisone for itching, without a prescription. Americans cannot. And in Britain, Denmark, Canada, West Germany and Switzerland, people can buy a non-sedating OTC antihistamine. Americans cannot.

It's obvious that these countries have competent drug regulatory authorities. Citizens in Europe and Canada don't significantly differ from Americans in the way they metabolize medicines, in their educational levels, or in their interest in assuming a greater degree of responsibility for their own health. But right now, they do seem to have greater access to products they can use in self-care. At best, if switch still takes place, the additional cost of a user fee will be passed on to the consumer as a hidden tax on the medicine.

Second, drugs switched from prescription to nonprescription status generally enter a product category already crowded with competitors. Since competition is so keen in the OTC industry, any additional entry costs in the form of a user fee on a New Drug Application would make it particularly difficult for smaller OTC companies to engage in switch. The result could be an unfair burden on smaller businesses.

Mr. Chairman, as I have said, we support full funding of FDA. It is important that the Agency be provided with whatever resources are necessary to carry out its congressionally-mandated public task and its needs in the years to come. However, we do not believe that industry should be charged for implementation of this public responsibility.

Mr. Chairman, that concludes my statement. I would be pleased to answer any questions.

Thank you.

1 Senate Report 98-566 at 122; Senate Report 99-500 at 131; Senate Report 100-203 at 125 and Senate Report 100-389 at 131.

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3/23/90

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STATEMENT
OF
RICHARD D. GODOWN,
PRESIDENT
INDUSTRIAL BIOTECHNOLOGY ASSOCIATION
FOR THE
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND
RELATED AGENCIES
OF THE
HOUSE APPROPRIATIONS COMMITTEE
MARCH 27, 1990

Mr. Chairman and members of the Subcommittee:

My name is Richard D. Godown and it is my pleasure to appear before you today on behalf of the Industrial Biotechnology Association, a trade association representing over 100 large and small companies involved in every aspect of biotechnology, including pharmaceuticals, medical diagnostics, vaccines, animal drugs, food processing, agriculture, energy, and environmental applications.

IBA Opposes FDA User Fees

Since most of these new products cannot be marketed without prior FDA review, adequate FDA resources are essential to our industry's ability to develop and sell new products. As a result, IBA is strongly opposed to proposed major cuts in the Food and Drug Administration's fiscal year 1991 budget. Specifically, IBA opposes the Administration's proposal to raise $157 million in user fees for FDA because they would suppress future product research and development by increasing new drug development costs. FDA is scheduled to receive an additional $108 million, an increase of 18 percent over last year. However, when the user fee portion of the new budget is deducted, federal appropriations for FDA are actually reduced by $49 million. We consider this nothing more

than fancy fiscal footwork.

Even without the proposed cuts, IBA is convinced that FDA does not have adequate resources to recruit and retain enough qualified staff to expeditiously review important new products. IBA strongly believes that timely approval of new drugs, medical devices, and other FDA-approved products is in the public interest. We have previously testified before Congress in support of enhancing FDA's resources by providing additional drug review staff, improved facilities, and higher salaries, and we continue to support substantial real increases in FDA's budget.

Any proposal to offset budget cuts by adding a user fee would negatively impact on future research and development by increasing new drug development costs. Of special concern to the biotechnology industry is the effect on small companies, for which user fees are most likely to be truly burdensome. To require payment of a user fee is an unwarranted burden that must be added to the already high costs of research and development which falls so heavily on the small companies in our industry. Science and technology progress will lead to economic growth and development for the United States both here and in international markets. We believe the government must encourage the pioneer spirit of entrepreneurialism that

plays so prominent a role in the development of science and technology. This Administration has sought to encourage the development of small businesses and has identified biotechnology as one of the three most exciting frontiers now being explored to unlock the secrets of life for the benefit of all; this proposal would stifle that.

Furthermore, in many cases, user fees could be imposed for items that never reach the commercial market, while currently marketed products avoid the fee even though FDA resources are expended for post-marketing surveillance. We believe that both the public and private sectors are best served by the current system.

The Administration's proposal would also require the establishment of an individual billing mechanism for the agency and will require the creation of a separate accounting bureaucracy to keep track of direct and indirect personnel costs, consultant fees, etc. This would have the net effect of driving up regulatory costs without improving productivity, something IBA strongly opposes. We believe that the FDA should focus its resources on improving the timeliness of its approval of new drugs to better serve the public.

FDA acts for the public, not for the industries it

regulates. And it is the public which realizes the major benefits from its review, approval, and surveillance activities. These should be carried out at whatever level is reasonable and necessary, not a level established by determining what amount of financial burden the industry can carry.

The budget proposes that the failure to institute FDA user fees would result in an 11.5% cut ($35 million) in current agency-wide staffing levels, with a disproportionate cut in funding for FDA's drug and biologic program.

IBA Urges Subcommittee to Adopt FDA Council Recommendations

The IBA supports the FDA Council's recommendation of increasing FDA funding by $45 million to a total of $730 million and urges the subcommittee to adopt the following FY 1991 funding recommendations for the Food and Drug Administration:

The FDA Council recommends that the Food and Drug Administration be appropriated $730 million, a $45 million increase above the recommended level in the 1991 President's Budget Request. An appropriation of $730 million would provide for the following.

* Restoration of the $157 million in user fees. This restoration will provide the full direct appropriation to the FDA in place of the user fees included in the 1991 President's Budget Request. The FDA Council opposes the funding of these initiatives through the assessment of user fees.

The new initiative included in the President's Budget

Request addresses many of the high priority resource needs of the FDA. Full restoration of these funds will allow the Agency to maintain operation of current FDA programs and initiate high priority programs identified in the Administration's Budget. Programs include the following.

* Additional personnel to address the pressing needs of drug (human and animal), biologics, and medical device review.
* Food safety initiatives, including reviews, particularly of food additives; labeling; monitoring; and, inspections.
* Support of the National Vaccine Program.
* Establishment of a forensics program to enable the Agency to investigate problems with product tampering and fraud.

* $45 million in additional funding to address high priority needs within the Agency which were not included in the 1991 President's Budget Request.

Facilities/Repair and Renovation

* Repair and restoration of existing facilities to meet safety requirements.
* Complete construction on FDA AIDS research building on the NIH campus.

Equipment and Instrumentation

* Equipment and instrumentation for FDA laboratories and field research sites.
* Upgrading information and data management systems.

Training of Regulatory Reviewers

* Funds to establish new collaborative training programs in regulatory review, similar to that implemented between the FDA and the National Cancer Institute for oncology drugs.

IBA respectively urges the subcommittee to adopt these FDA Council recommendations to strengthen the Food and Drug Administration to better serve the public's needs.

# # #

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STATEMENT OF THE DIAGNOSTIC IMAGING AND THERAPY SYSTEMS DIVISION
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

FY 1991 BUDGET PROPOSALS FOR THE FOOD AND DRUG ADMINISTRATION

SUBMITTED TO THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON AGRICULTURE, RURAL DEVELOPMENT, AND RELATED AGENCIES

HON. JAMIE L. WHITTEN (D-MS), CHAIRMAN

MARCH 21, 1990

The Diagnostic Imaging and Therapy Systems Division of the National Electrical Manufacturers Association wishes to express opposition to the user fee proposal contained in the President's FY 1991 budget submission for the Food and Drug Administration. NEMA, with headquarters in Washington, D.C., represents more than 95% of U.S. manufacturers of nuclear imaging, radiation therapy, diagnostic ultrasound, x-ray imaging, and magnetic resonance imaging equipment. In addition, the division represents manufacturers of picture archiving and communications systems, as well as manufacturers of extracorporeal shockwave lithotripters.

As manufacturers of diagnostic imaging and therapy systems equipment, it is our firm belief that these user fees constitute nothing short of a tax on new technology. As such, the proposed user fees will only stifle the research and development efforts needed to maintain American competitiveness in today's health care market.

We at NEMA believe that competitiveness is at the heart of the user fee issue -- competitiveness not only for American manufacturers abroad, but also for small manufacturers at home. Careful consideration must be given to the impact of the user fee proposal on small businesses as the Congress begins its assessment of the user fee proposal. As you know, small manufacturers typically have limited capital and may experience difficulty in meeting normal day-to-day expenses. To require these companies to provide "up front" money for FDA review of

premarket approval applications, supplements, 510(k)'s, and other services mandated by law, presents an extra hurdle that is certain to impede the ability of small manufacturers to compete.

Supporters of the user fee concept contend that user fees are a necessary evil, and are the only way for the Food and Drug Administration to garner the resources necessary to efficiently fulfill its important mission of protecting the public safety and health. We take exception to this view. While we do not dispute the contention that the Food and Drug Administration needs additional resources, we dispute the extent to which user fees would lead to increased efficiency in FDA operations. On the contrary, we believe that user fees would undermine the efficiency of the existing FDA product approval process. Since the user fee proposal, as currently structured, rests upon the costs incurred by the FDA as a result of the product approval process, the greater the resource expenditure associated with the product approval process, the greater the user fee collected by the agency. This results in a situation in which the agency has no particular incentive to control product approval costs, since these costs are recouped from industry. Clearly this is a situation which would lead to increased inefficiency in the FDA product approval process.

Indeed, a detailed analysis of the administration's FY 1991 user fee proposal underscores the extent to which user fee revenue will fail to promote efficiency in FDA operations. For example, proposed program increases for FY 1991 are projected by

FDA officials to total approximately 53 million. This means that only one third of the proposed $157 million in user fee revenues will be applied towards program expansions. The balance (66.3%) of user fee receipts would be applied to offset existing program expenditures. Thus, the proposed user fee revenue would be used primarily to fund existing FDA activities, and only a small fraction would be used to promote increased efficiency in FDA operations.

This point is particularly salient with respect to the user fee revenue anticipated from medical device manufacturers. FDA estimates place user fee revenue from new device applications at 16 million. By contrast, actual program increases for new device review are estimated at only 2.5 million. This means that 85% of the user fee revenue collected from device manufacturers will be applied to areas other than a more expeditious review of medical devices. Thus, it it appears as if device manufacturers will see only a small fraction of the revenues expended on FDA user fees translated into expansions of device review activities.

Further scrutiny of the President's FY 1991 budget request reveals the user fee proposal to be little more than an elaborate accounting mechanism whereby overall FDA appropriations would be reduced. Whereas FY 1990 FDA appropriations stood at $587.1 million, the President's FY 1991 budget calls for merely $528 million in FDA appropriations -- with the remainder of FDA revenues to stem from the user fee proposal. Take away the user

fee revenue, and the true intent of the user fee proposal is readily apparent -- a sixty million dollar reduction in FDA appropriations.

Moreover, even if the user fee proposal were to be enacted, one must not overlook the additional costs entailed in collecting user fees from manufacturers. Collection costs and the expenditures associated with hiring the additional FTE's necessary for implementation will partially negate any revenue gains to be derived from the user fee proposal. This leaves the FDA with even less money to spend on improving program efficiency.

Finally, from a management perspective, it is uncertain as to how the user fee proposal would be implemented. FDA sources indicate that user fee revenues could run as high as $1,000 for each 510(k) submission and as high as $100,000 for each PMA application for medical devices. The FY 1989 annual report issued by the FDA's Office of Device Evaluation indicates that only fifty-six original device PMA's and 6,136 original 510(k) submissions were reviewed by FDA officials in FY 1989. Assessing user fees on these types of submissions alone will not enable FDA to arrive at the 16 million in user fee revenue to be collected from manufacturers of medical devices. One then wonders how the other types of device submissions reviewed by the Office of Device Evaluation -- for example, PMA amendments and supplements, investigational device exemptions, and 510(k) supplements -- will fare under the user fee proposal. Clarification of this issue is

PMA's (97%) received by the FDA's Office of Device Evaluation in FY 1989 were supplementary in nature. Further discussion of how these types of submissions, which contribute greatly to ODE's overall workload, would fit into the user fee scenario is a necessary prerequisite to future debate on the user fee proposal.

Before I close, let me point out that in many ways, the very nature of medical technology is incompatible with the user fee concept. Oftentimes, the pace of technological innovation is so rapid as to require the submission of separate 510(k) applications for each incremental change in product design. Under the terms of the user fee proposal, a user charge would be assessed for each separate 510(k) application. The end result of such an approach is the imposition of a user fee following each technological improvement made over the life cycle of a product. The deleterious impact of this scheme of incremental taxation is readily apparent.

These are but a few of the issues which must be addressed as the subcommittee begins consideration of the user fee proposal. Careful consideration of these issues is warranted as the subcommittee proceeds in its deliberations. We at NEMA urge the members of this subcommittee to disallow the user fee proposal, and to look to other sources of revenue to find the financial resources which the Food and Drug Administration needs to carry its important work into the twenty-first century.

TUESDAY, MARCH 27, 1990.

THE WIC PROGRAM

WITNESS

HON. TONY P. HALL, A U.S. REPRESENTATIVE FROM THE STATE OF OHIO

Mr. WATKINS. We will now hear from my good friend the Honorable Tony Hall.

Tony, it is great to have you here.

Do you have anyone with you?

Mr. HALL. No, I don't.

Mr. WATKINS. Well, we accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. Feel free to summarize your comments, if you would like.

Mr. HALL. Thank you.

I have a long statement, and I would like for it to be part of the record. This afternoon, I do have a few things I would like to articulate.

Mr. WATKINS. You bet.

Mr. HALL. That will be it.

Thank you, Mr. Chairman. I appreciate the chance to be before you. As you know, I am Chairman of the House Select Committee on Hunger, and I am here to ask you to continue your support and leadership in expanding the WIC program.

In 1978, the Congress directed the Department of Agriculture to conduct an evaluation of the WIC program. Finally, in 1986 we received the final report from the Department which contained a compendium of results that bore little resemblance to the executive and chapter summaries prepared by the researchers. It contained questionable data, and in certain instances it flatly contradicted the researchers' findings.

In 1987, representatives Mickey Leland, the late chairman of the Hunger Committee, Gus Hawkins, Jim Jeffords, and Senator Tom Harkin commissioned a General Accounting Office (GAO) investigation of possible improprieties in the handling of this document. For almost four years we were led to believe that this comprehensive, mandated study had concluded that the positive impact of WIC participation was questionable, at best.

During that time the Congress was forced to determine policy and funding levels governing the operation of the WIC program on information that was grossly inaccurate.

In December, 1989, we received the final report from the GAO, and in January the Select Committee on Hunger conducted hearings. We, I think, brought to light once and for all the real findings of the Department of Agriculture's national WIC evaluation.

The truth of the matter is, despite the Department's effort to conceal its own evaluation, that WIC "improves the diet of pregnant women and children, adds to maternal weight gain, increases the use of prenatal care, and reduces pre-term deliveries."

What questions did USDA's report place in our minds about the effectiveness of WIC? How much more would we have increased program funding levels over the past four years if we had had the

truth? These are questions to which there is no response. Our responsibility now lies in using the momentum created by the GAO findings to expand WIC services to a greater number of low-income, at-risk women, infants, and children who are now unserved.

Earlier this month I testified before the Budget Committee. I essentially said the same thing to them. I recommended that the fiscal year 1991 budget contain an increase of $150 million above current services for each of the next five years. This would have the effect of greatly expanding the reach of the program.

It is estimated that the WIC program currently serves about 60 percent of the eligible population. I think in Ohio it is a little bit under 50 percent. At least I know in my own county of Montgomery it is about 48 percent. This increase in funding, combined with containment efforts initiated by the States, would expand service availability closer to full participation.

So I come before this distinguished panel today to recommend that funding increase by $150 million higher than the current services. The evidence is overwhelming. The WIC program merits a strong funding commitment. This is a time of fiscal constraint, but it is a time of great need for millions of women, infants, and children. Expansion of WIC would be a wise investment, not a fiscal folly. In the past you and this committee have demonstrated a commitment to the WIC program, and it is a commitment we cannot allow to fade.

Thank you, sir.

Mr. WATKINS. Thank you, Tony. I know your sincerity with regard to this program. I want to say, first, I really appreciate your carrying the torch for this particular kind of program. It is very important. We need champions like you to continue to push forward with it. I thank you for it.

Mr. HALL. Thank you very much.

Mr. WATKINS. I wish all the other members could have been here for your statement.

[Congressman Hall's prepared statement follows:]

TESTIMONY OF CONGRESSMAN TONY P. HALL
CHAIRMAN, HOUSE SELECT COMMITTEE ON HUNGER
before the
HOUSE APPROPRIATIONS SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

March 27, 1990

I am grateful for the opportunity to appear before you today, as Chairman of the House Select Committee on Hunger, to encourage your continued support and leadership in expanding the WIC Program.

In 1978, the Congress directed the Department of Agriculture to conduct an evaluation of the WIC Program. Finally, in 1986, we received a final report from the Department which contained a compendium of results that bore little resemblance to the executive and chapter summaries prepared by the researchers; contained questionable data; and in certain instances, flatly contradicted the researchers' findings. In 1987, Representatives Mickey Leland, the late Chairman of the Hunger Committee; Gus Hawkins, Chairman of the Education and Labor Committee; Jim Jeffords, then ranking minority of the Education and Labor Committee; and Senator Tom Harkin commissioned a General Accounting Office (GAO) investigation of possible improprieties in the handling of this document.

For almost four years we were led to believe that this comprehensive federally-mandated study had concluded that the positive impact of WIC participation was questionable at best. During this time, the Congress was forced to determine policy and funding levels governing the operation of the WIC Program on

information that was grossly inaccurate.

In December 1989, we received a final report from GAO and in January the Select Committee on Hunger conducted a hearing to bring to light, once and for all, the real findings of the Department of Agriculture's National WIC Evaluation.

The truth of the matter, Mr. Chairman is that despite the Department's efforts to conceal, its own evaluation reveals that "WIC improves the diet of pregnant women and children, adds to maternal weight gain, increases the use of prenatal care, and reduces pre-term deliveries."

What questions did USDA's report place in our minds about the effectiveness of WIC? How much more would we have increased program funding levels over the past four years if we had the truth? These are questions, Mr. Chairman, to which there is no response. Our responsibility now lies in using the momentum created by the GAO findings to expand WIC services to a greater number of low-income at-risk women, infants and children who are now unserved.

Earlier this month, I testified before the House Budget Committee to recommend that the Fiscal Year 1991 budget contain an increase for WIC of $150 million above current services for each of the next five years. This would have the effect of greatly expanding the reach of the program. It is estimated that WIC currently serves about 60 percent of the eligible population. This increase in funding, combined with containment efforts initiated by the states, would expand service availability closer to full participation.

I come before this distinguished panel today to recommend that the Rural Development, Agriculture and Related Agencies Appropriations Bill for Fiscal Year 1991 likewise provide funding for WIC at a level $150 million higher than current services.

The evidence is overwhelming: the WIC Program merits a strong funding commitment. This is a time of fiscal constraint, but it is a time of great need for millions of women, infants, and children. Expansion of WIC would be a wise investment, not a fiscal folly. In the past, this committee has demonstrated a commitment to the WIC program -- it is a commitment we cannot allow to fade.

Mr. Chairman, since the Committee's hearing in January, we have learned from other USDA contractors that the Department's questionable handling of the National WIC Evaluation was not an isolated incident. In fact, the research team for the "Study of the Child Care Food Program", issued in August 1988 and the "Study of the Temporary Emergency Food Assistance Program", issued in April 1987 fell victim to the Department's manipulations in the release of final report documents. In the former case, the Department substituted its own executive summary which downplayed the positive impact of the program. In the latter incident, the team was falsely informed by Department staff that certain facets of their research were scientifically unsound when no Department evaluation of these issues ever occurred.

We cannot allow this type of abuse to continue. We, as policymakers, are heavily reliant upon this research to develop and implement national policy. We must have assurances that information transmitted by the Department of Agriculture is factual

and accurate. Research administrators at the Department must utilize unbiased, scientific peer review rather than advisory committees hand-picked by USDA. I would welcome the opportunity to work with you to develop language to improve the scientific credibility of studies of food programs which are so critical to the health and wellbeing of our nation's children.

The GAO investigation also addressed USDA's withdrawal of a request for a follow-up study on the effect WIC benefits had on the physical and mental development of children born to women studied in the National WIC Evaluation. The Department informed GAO that the decision to withdraw the proposal was based on the grounds that the response rate from the initial control group would be to low. GAO has concluded that the Department's decision to withdraw the proposal was based on flawed calculations and, therefore, premature. In 1987, the Ford Foundation requested that research analysts from Harvard, Cornell and Johns Hopkins Universities and the University of California assess the feasibility of the proposal which had been rejected by USDA. Their conclusion was unanimous that the proposed study was practical and should be conducted. However the Ford Foundation was unable to fund the project due to a lack of resources.

GAO reports that "USDA is currently determining whether to pursue a study of WIC's impact on a different group of children, which its contractors concluded could feasibly be done in about 5-1/2 years at an estimated cost of $16 to $22 million." I have been informed that the proposal initially submitted to USDA in 1984 would cost approximately $3 million.

While I am not a scientific researcher, based on GAO's investigation, I am inclined to believe that there are some political undercurrents guiding the Department's rejection of the initial proposal and I believe that we in Congress should have some information on why they are so vehemently opposed to pursuing that research.

Mr. Chairman, I would also like to share with you and the Members of the Committee a few of my concerns regarding both the quality and quantity of commodities distributed through domestic food assistance programs. On February 26th, the House Select Committee on Hunger conducted a field hearing on Standing Rock Sioux Indian Reservation to assess the lack of food security and diet related health problems among American Indians residing on reservations. While there, I had an opportunity to view the types of commodities made available to low-income households through the Food Distribution Program on Indian Reservations (FDPIR). Following discussions with some of the nutritionists at Standing Rock, I must admit that I was appalled by the high fat and sodium content of the canned beef and canned pork and the palatability of these products.

Preliminary research by my staff indicates that the meat product distributed through FDPIR is the same product made available through all domestic food aid programs eligible to receive canned meat. I am certainly concerned about the nutritional integrity of these commodities in view of the fact that so many low-income Americans rely on these foods for their basic diet. I have been joined by Congressmen Bill Emerson (R-MO), Byron

Dorgan (D-ND) and Eni Faleomavaega (AS,Del) in requesting that GAO conduct an investigation of the standards used to determine which commodities are purchased for distribution; whether the commodities are consistent with the nutritional Dietary Guidelines for Americans published by the Secretary of Agriculture and the Secretary of Health and Human Services; whether the commodities provided are nutritious and of high-quality; and the applicability of current federal labeling requirements and the feasibility for complete nutrition labeling on commodities.

With respect to the quantity of foods distributed, I am alarmed by the dwindling supply of surplus food and the severe shortages facing school feeding programs across the country. The loss of these commodities compounded by the increased prices that schools must pay in the market place are sure to result in an escalation in school meal costs. This project increase in lunch prices is sure to translate into fewer children purchasing meals. Without this income, schools will be incapable of sustaining their programs and forced to terminate sponsorship of meal services. Consequently, millions of low-income children will lose access to what, for many of them, is the only consistent source of nourishment they receive. We must not let that occur.

Mr. Chairman, Members of the Subcommittee, again I thank you for this opportunity to present my views.

TUESDAY, MARCH 27, 1990.

FOOD AND DRUG ADMINISTRATION

WITNESS

W. DOUGLAS CAMPBELL, COALITION FOR FDA RESOURCES

Mr. WATKINS. Is Douglas Campbell in the room?

Mr. CAMPBELL. I am here.

Mr. WATKINS. Mr. Campbell, we are glad you are here. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. We would appreciate your summarizing the statement.

Mr. CAMPBELL. Thank you very much.

My name is Doug Campbell, and I am here for the Coalition for FDA Resources.

As have so many others, we would like to thank you and the rest of the subcommittee and committee for their past support of the FDA. That has been very helpful.

Unfortunately, in light of the increase that we got last year, we had hoped that there were going to be considerable benefits to the agency. And then, after Gramm-Rudman and some of the other cuts that came in afterwards, we only got something like 1.3 percent increase in the agency's personnel level. We really hope that this year we can do better.

As you know, the Food and Drug Administration is a critical national resource. It touches each of our lives in so many different ways from medicine to medical devices to foods, residues—just about anything you can think of that we consume on a daily basis.

However, recognition has grown within and without the agency during the past year that its resource needs are even greater than we had realized.

During the past year, Congress and others have pointed out shortcomings in the agency's ability to monitor generic drugs, imported foods, and seafood. Problems cited are largely the result of a decade of static personnel levels in the face of mushrooming responsibilities. The FDA has tried to respond through management initiatives and, in the end, by relying on honor systems. While some of these steps have been productive, it is apparent that they have not been enough.

FDA's plight has been widely noted in the media. Doctor Samuel Thier, President of the National Academy of Sciences Institute of Medicine, stated to the New York Times "The Food and Drug Administration is a demoralized group being asked to do too much with too few resources."

The FDA now needs a significant infusion of personnel and funding for facilities and equipment. Anything less will simply invite more food-borne sickness and more suffering as new medical products languish under agency review, more doubts about FDA's judgments.

We turn to you, Mr. Chairman, and to your colleagues in the Senate and the House to begin the rebuilding of this vital public institution.

I will abbreviate the balance of my testimony and touch on just a couple of high points.

The Administration, to its credit, is for the first time calling for significant increases in the FDA budget and in personnel levels. We appreciate that and we commend them for it. However, these requests will not be of as much benefit to the agency as might appear at first blush.

For example, the Administration is asking for 618 additional FTEs, adjusting for AIDS personnel for comparison purposes; however, this total is still 400 short of the staffing level the agency had ten years ago. You can imagine the increase and the number of products in our population since that time ten years ago. And of the 618 new FTEs called for by the Administration, fully two-thirds are responses to these pressure points that Congress has pushed during the last 12 months—that is, generic drugs and seafood monitoring. That leaves only 200 FTEs, an increase of less than 3 percent, to meet the personnel shortage in the entire remainder of the agency.

There are many examples where those personnel shortages have caused holdups in new products coming to market, caused unnecessary suffering, and even deaths. We know that the subcommittee is responsive and is aware of that fact, but we feel we must repeat it.

There are a couple of other additional items.

Critical facilities and equipment needs remain unmet. Servicing laboratories is an expensive business. The Administration requests just $4.8 million for over 30 laboratories nationwide, but the agencies own plan identifies $18.5 million in first-priority projects, alone.

The laboratory sums, in addition, called for $2.5 million. We estimate that $14 million is necessary for replacement of laboratory equipment.

We encourage the subcommittee to look at the unified campus concept for FDA. That is moving forward. The GAS has recently confirmed that they feel FDA should be on a unified campus, and that is something that we would like to work with the subcommittee on over time. We know that is a long-term project.

We are asking for an additional $3 million to let the FDA implement the next phase of that project—planning, engineering studies, architect studies, and that kind of thing.

Finally, we, too, would like to add our voice to those who oppose user fees. We do so for a variety of reasons, among them the fact that FDA's activities are essential public services and should be fully funded through the appropriations process. Further, it is necessary to keep FDA's activities and judgments free in fact and in perception from any improper institutional self-interest or industry manipulation.

To conclude, in our written testimony we reference the Administration's impressive commitment to expanding the NASA budget by an amount four times the FDA's entire budget. A nation willing to finance the future through enterprises such as NASA and the National Institutes of Health should be willing to secure the present through the relatively modest FDA increases that we propose. These increase amount to a total of $60 million beyond the President's budget request, or a total of $745 million: that's $32.5

million for 500 new positions; $12.5 million for new laboratory equipment; $12 million for facilities repair and renovation; and $3 million for the continuation of the unified campus plan.

We also concur in supporting the Administration's request in the President's budget and in the supplemental that they have asked for for the generic drugs program.

We thank you, Mr. Chairman and members of the subcommittee, for your consideration of our views and hope to work with you in the future.

Mr. WATKINS. Thank you, Mr. Campbell. We appreciate it very, very much.

[Mr. Campbell's prepared statement follows:]

TESTIMONY OF

W. DOUGLAS CAMPBELL

EXECUTIVE DIRECTOR,

COALITION FOR F.D.A. RESOURCES

BEFORE THE

U. S. HOUSE OF REPRESENTATIVES

APPROPRIATIONS COMMITTEE,

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE

AND RELATED AGENCIES

MARCH 27, 1990

Mr. Chairman and members of the Subcommittee, on behalf of the Coalition for FDA Resources I thank you for the opportunity to share with you the Coalition's views on the FY 1991 appropriation for the Food and Drug Administration. The Coalition's membership spans all sectors of industry regulated by the Food and Drug Administration, and includes representatives of patients and voluntary health organizations. These groups may have their own preferences for the distribution of funds within the Food and Drug Administration, but all of them are united in making adequate funding for FDA a priority. Each of them is convinced that there are few better investments Congress could make than significantly increasing the resources FDA has to work with.

Members of the Coalition include the American Heart Association, the Animal Health Institute, the Association of Biotechnology Companies, the GPIA Animal Drug Alliance, the National Food Processors Association, the National Organization for Rare Disorders, and the National Soft Drink Association. The Pharmaceutical Manufacturers Association and Health Industry Manufacturers Association, Coalition members, are in substantial agreement with this testimony, but have not yet completed their formal review processes. If you would like, I will provide the Subcommittee a letter reflecting their formal positions as soon as they are available.

First of all, the Coalition wants to thank you, Mr. Chairman, and the other members of the subcommittee and the full committee for your support last year of FDA funding over and above the President's request. That request itself was grossly inadequate, and the additional funds were most welcome. Unfortunately, much of the positive impact we had expected was eliminated by the Gramm-Rudman sequestration order and the across-the-board budget cut to fund the war on drugs. When all was said and done, the agency's personnel increased only 1.3 percent compared to the preceding year (excluding those targeted to AIDS).

This year, we hope we can do better. As others will no doubt point out to you in support of their programs, cuts in the defense budget have been proposed. This should help lower the general level of budgetary tension and lead to an atmosphere more favorable to expanding key domestic efforts, such as the FDA.

As you are aware, the Food and Drug Administration is tasked to serve as the public's guarantor that the bulk of the food supply is safe and wholesome, that all medicines and medical devices are safe and effective, and that they reach patients promptly. In the best fed society in the world, and in perhaps the best medicated, the scope of these tasks is enormous. The proper functioning of the FDA is truly an essential component of the general sense of well-being we take for granted as Americans.

However, recognition has grown within and without the agency that its resource needs are even greater than we had realized. Criticism from Congress and others during the past year has pointed out shortcomings in the agency's ability to monitor generic drugs, imported foods, and seafood. These are all resource-intensive efforts, and the resources have not been available. The problems cited are largely the result of a decade of essentially static personnel levels (see Table I) in the face of mushrooming responsibilities. The FDA's response has been to slight some duties in favor of others, to develop sampling and compliance targeting techinques to compensate for decreased monitoring capabilities, and in the end to rely on "honor systems". While some of these steps have been productive, we have come to realize that they are not enough.

FDA's plight has been widely noted in the media. For example, Dr. Samuel Thier, president of the National Academy of Sciences' Institute of Medicine, stated to the New York Times, "The Food and Drug Administration is a demoralized group, being asked to do too much with too few resources."

The Food and Drug Administration now needs a significant infusion of personnel and funding for facilities and equipment. Anything less will simply invite more food-borne sickness, more suffering as new medical products languish under administrative review, more doubts about the agency's judgments.

We turn to you, and to your colleagues in the Senate, to begin the rebuilding of this vital public institution. How much money, how many people will it take? The Administration, to its credit, is calling for an FY 1990 supplemental of $13.9 million to help meet the generic drug challenge, and an additional FY 1991 increase of $84 million over the FY 1990 post-sequestration budget of $587 million. Of the $84 million FY 1991 figure, $31 million is the current services factor, resulting in a real program increase of $53 million.

These amounts translate into an additional 125 f.t.e.'s, via the supplemental, and 493 f.t.e.'s for FY 1991, on the FY 1990 base of 7061 f.t.e.'s (we have subtracted personnel targeted to AIDS, for comparison purposes). Given the Administration's past budget requests, this is a refreshing commitment to addressing FDA's needs.

However, the task given FDA is larger yet, and these figures should be significantly higher. Even the President's request of 7679 f.t.e.'s, exclusive of AIDS personnel, is 400 less than the agency had ten years ago. And during the decade since then, increased responsibilities at FDA have created a need for some 2000 additional f.t.e.'s.

Nor do the 618 total new f.t.e.'s seem so generous when we realize that fully two-thirds of them are responses to pressure points which Congress has pushed during the last twelve months, specifically generic drugs and seafood monitoring. While we support increases in these areas, the remaining 200 f.t.e.'s do not go far toward meeting the personnel shortage in the rest of the agency.

For example, the agency is doubling the size of the generic drug operation. While that is appropriate, no more than a 50 f.t.e. increase is proposed for all of FDA's pre-market approval activities, on a base of 1000 f.t.e.'s. Review of new product applications at the agency still takes much too long. The only cure is additional highly trained scientific personnel. An illustrative case: one unit in a product review division at FDA has responsibility for eight pending final product applications and 150 investigational new drug filings. This group is staffed by only three professionals, and they were originally hired to be full-time researchers. In this context, morale and staff turnover problems at FDA come as no surprise. To bring down review times decisively, a 50 <u>percent</u> increase rather than a 50 f.t.e. increase in the product approval workforce would not be unreasonable.

As for field inspectors, the agency's own request to the Public Health Service for additional personnel for that purpose was several hundred. Unfortunately, only 125 appeared in the President's budget.

Therefore, on balance, we urge the subcommittee to provide for an additional 500 f.t.e.'s beyond the President's request and supplemental, which would require an appropriation increment of approximately $32.5 million. Conceptually, we feel that a total of 10,000 non-AIDS f.t.e.'s would be more appropriate to the FDA's mission, but we recognize that the agency could not absorb such a large staffing increase in a short period of time, and we acknowledge that the funds available to the subcommittee are not limitless.

We further feel that the President's request woefully understates the FDA's need for equipment and facility renovation. For such purposes, private industry generally devotes 3-4 percent of budget; FDA has historically spent 1 percent or less. It operates laboratories in over thirty locations throughout the nation, laboratories whose findings are vital to protecting the public's health. And yet the Administration requests only $4.8 million for this purpose.

For just three projects the real total is $8 million: an incinerator for Module I at Beltsville -- $2.2 million; replacement of water system at NCTR -- $2.4 million; and an additional $3.5 million in cost increases for Building 29B because of construction delays beyond FDA's control. The agency's FY 1991 Facilities Plan identifies $18.5 million in first priority projects alone, the result of years of inadequate maintenance budgets.

Even more alarming is the need for new laboratory equipment. Beyond the need for expanding the agency's instruments to encompass new analytical technologies, there is a severe problem with the continued reliance on equipment which is "beyond the point of proper replacement", as the current "Justification of Appropriation Estimates" states.

This document concedes "47 percent of the Field's laboratory equipment is at or beyond the point of proper replacement, which if done in one year would require over $14 million. This request includes $2.5 million to replace equipment that is most out of date, which will reduce problems due to obsolete equipment . . . ." That the world's wealthiest nation, which boasts of its long leadership in technological innovation, cannot commit $14 million to bring its primary public health protection agency's technical capacity into the 1990's is incomprehensible.

The Coalition is pleased, however, with progress toward a unified FDA campus. It notes that the General Services Administration has recently endorsed this concept, and is working with FDA to that end. Currently, the Program of Requirments for the project is being developed, and should be completed within the first half of the fiscal year. But we are concerned that no funding is requested beyond that point. We ask the Subcommittee to include $3 million to implement the next phase of the project at that time (architect's and engineering plans and studies).

Finally, the Coalition would like to note that its recommended appropriations take no account of the Administration's proposal for $157.2 million in user fees. We are opposed to such fees for a variety of reasons, among them the fact that FDA's activities are essential public services and should be fully funded through appropriated funds. Further, it is necessary to keep FDA's activities and judgments free, in fact and in perception, from any improper institutional self-interest or industry manipulation. We very much appreciate, Mr. Chairman, your recognition of these points and your audible rejection of user fees when FDA testified earlier this month. To adapt a proverb, "From your mouth to OMB's ear."

In conclusion, let us step back and bring some perspective to the FDA budget by considering the President's FY 1991 request for the National Aeronautics and Space Administration. In cosmological terms, FDA's budget is but a moon eclipsed by NASA's Jupiter. Just the increase ($2.83 billion or 23 percent) proposed for NASA is four times FDA's entire budget. We do not make this point to suggest that NASA's budget is unjustified. As a nation, we have been willing to fund our space program in large part because of our faith that the effort itself is noble, and that over the long term its technological byproducts will improve our lives through applications in medical devices, consumer products, electronics, and so forth. Our point is that the

benefits of a $127 million investment in FDA program increases are much less a matter of faith. Very quickly they will result in faster drug and device approvals, more thorough screening of marketed products, and a rejuvenated agency.

In his budget proposal the President himself singled out three budget priorities under "Expanding the Human Frontier": space, biotechnology, and high-energy physics. While considerable sums are proposed for biotechnology research, it is ironic that virtually nothing is targeted to improving the FDA's ability to regulate biotechnology product applications as they come in. A critical shortage of FDA personnel versed in the state of the art even now threatens to undermine our national leadership in bringing these miracles to market. The situation will only get worse as both government and industry pour increasing sums into research, with no corresponding attention to the regulatory gatekeeper whose well-informed and prompt judgment means life and death not only for our biotech companies, but for our citizens.

A nation willing to finance the future through enterprises such as NASA and the National Institutes of Health should be willing to secure the present through the relatively modest FDA increases we propose. These increases amount to a total of $60 million beyond the President's budget request: $32.5 million for 500 new f.t.e.'s, $12.5 million for new laboratory equipment, $12 million for facilities repair and renovation, and $3 million for the continuation of the unified campus plan. In addition we strongly support the requested supplemental of $13.9 million for the generic drug program, as well as the increases identified by the Administration.

As we have discussed, this will not allow the agency to fully rise to its responsibilities, but in the context of what can be done in a single year, it is a good start.

We thank you, Mr. Chairman, and members of the Subcommittee, for your consideration of our views. We hope to work with you to achieve our common goals as the appropriations process moves along.

F.D.A. PERSONNEL STATISTICS: FY 1980-1991

FY '80	8089	f.t.e.'s
FY '81	7799	
FY '82	7316	
FY '83	7292	
FY '84	7259	
FY '85	7191	
FY '86	7001	
FY '87	6833	(not including 127 targeted to AIDS)
FY '88	6927	(not including 280 target to AIDS)
FY '89	6970	(not including est. 380 targeted to AIDS)
FY '90	7061	(not including 506 targeted to AIDS)
FY '91 (per request)	7679	(not including 580 targeted to AIDS)

TUESDAY, MARCH 27, 1990.

BIOPURE RESEARCH AND DEVELOPMENT

WITNESS

NORMAN RABIN, BIOPURE CORPORATION

Mr. WATKINS. Mr. Rabin.

Mr. RABIN. I'm Norm Rabin, Director of Manufacturing for BIOPURE Corporation in Boston. I am sitting in for Carl Rausch, the Chairman and CEO, who, unfortunately, could not be here today.

Mr. WATKINS. As you know, Mr. Rabin, we accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. If you would like to summarize, we would appreciate it.

Mr. RABIN. Okay.

Biopure has successful ongoing human and veterinary research and development activities at a variety of institutions, including the University of Pennsylvania, Cornell University in New York, the University of New Hampshire, Tulsa University, Harvard, the Dana Farber Cancer Institute, and Massachusetts General Hospital.

I would like to inform you about a product that our company has been working on which is a scientific breakthrough in oxygen transport therapy, and I want to share with you today the development of a temporary blood replacement which will fill a need which cannot be met today—a replacement which is inexpensive, abundant in supply, potentially therapeutic, and has many uses in veterinary medicine and potential human applications.

It is a blood substitute. It has potential use in cats, dogs, horses, primates, and potentially humans. It is derived from the red blood cells of cows. It is an extraction of the hemoglobin molecule and is used in the upper oxygen transport through the circulatory system's veins and arteries to supply necessary oxygen to sustain the biochemical activity of life.

The raw material can be obtained either as a byproduct from beef packing houses or from an alternate and parallel use of farm animals—for example, a donor herd that could give certain amounts of blood on a regular basis, as well as be available for other uses such as milk and milk byproducts.

We are currently undergoing clinical trials at Tufts Veterinary School, the University of Pennsylvania, and the Animal Medical Veterinary Center of New York. Results have been extraordinarily promising so far. For example, we are already seeing preliminary clinical success with dogs having been saved from death, with horses having undergone transfusions with success, and various research animals whose lives have been spared due to the availability of this product.

We are also beginning to treat anemic foals, and have also treated small animals and are seeing significant reduction in cancerous tumor growth.

We and our research collaborators see an unprecedented potential for growth.

Because of lack of veterinary blood supply, hundreds of thousands of animals die yearly because of lack of donors. Also, animals cannot undergo surgery because of lack of a blood supply. An animal can undergo a transfusion with our blood substitute, which lacks any toxicity and eliminates the need for cross-matching. The animal can continue to function normally while reproducing its own blood.

We are in the third phase of animal clinical trials, and the data indicates that this product could be an important product even for use in humans. We are stalled, however, in the regulatory process from beginning first-phase human clinical trials. This problem is not unique to Biopure.

We are facing the problem at FDA of very hard-working and dedicated people not having the scientific expertise and the knowledge to make judgments about this particular innovative product. This is not meant to criticize people at FDA, but is merely to point out the increasing problem within the system for approval of these types of products.

To assure the success of our artificial blood materials for the veterinary market, Biopure has invested over $20 million in the technology and has successfully scaled up a small-scale production facility on a pilot scale. With this technology and the creation of commercial production facilities, 200,000 units could be manufactured annually. Unfortunately, I must tell you that due to the regulatory constraints mentioned earlier and regulatory uncertainties, as well as costs, these facilities could be lost to the United States.

It is critical that Biopure's leading edge biological separations technology and the product be saved from control by European and Far Eastern countries which are clamoring for the technology involved in the production of this critical product.

In the last few years, due to regulatory delays and U.S. financial uncertainties and constraints, we have been forced to consider expanding our efforts outside of the United States. This fact could ultimately cause the technology to be lost to West Germany, Africa, Canada, and Central America. Today, for example, we are being aggressively pursued by Pacific Rim countries and corporations to license and invest in our technology. The United States must ensure that this critical technology not be lost.

The requirement for a veterinary blood supply cannot be overstated. There is no national agency that collects annual blood like the American Red Cross does for humans, yet every day there are blood requirements because of animal injury, cancer, or necessary life-saving oxygen therapy due to anemia or animal trauma.

As I stated earlier, we are already enjoying preliminary clinical successes. We now need to help institutions in the veterinary world such as Tufts University, the University of Pennsylvania, and the Animal Medical Veterinary Center of New York to support a broader, more expansive range of testing in order to bring the product to market.

Further development and testing and ultimate full-scale production of our patent pending artificial blood substitute would answer a need of crisis proportion in the veterinary community and could lead to human use as well as other uses in the veterinary world.

The obvious potential benefits to human beings in this day of concern over tainted blood are obvious.

I would encourage you and the subcommittee members to provide funding to veterinary institutions of high caliber to continue development and testing of this product.

Thank you for your time. I will answer any questions.

Mr. WATKINS. Thank you. I just wonder if you could come up with blood types?

Mr. RABIN. No. Blood types are not required.

Mr. WATKINS. Not required?

Mr. RABIN. No, sir.

Mr. WATKINS. Thank you. That is quite interesting.

Mr. RABIN. Thank you for your time.

[Mr. Rabin's prepared statement follows:]

Testimony

Before the Rural Development, Agriculture and Related Agencies

Subcommittee on Appropriations of the Committee on Appropriations

House of Representatives
Congress of the United States

RE: Veterinary uses of Artifical Blood Substitute

By

Norman Rabin
Director of Manufacturing, Biopure Corporation

March 27, 1990

Mr. Chairman and Members, I would like to thank you for giving me the opportunity to testify. I am Norman Rabin, Director of Manufacturing of Biopure Corporation located in Boston, Massachusetts near and partially within the New England Medical Center. I am standing in for Carl Rausch, Chairman and CEO who unfortunately cannot be here today. Biopure has successful on-going human and veterinary research and development activities at the following institutions: St. Lukes Rush Presbyterian Medical Center in Chicago, Illinois; University of Pennsylvania in Philadelphia, Pennsylvania; Cornell University at Ithaca, New York; University of New Hampshire in Durham, New Hampshire; Tufts University, Harvard University, Dana Farber Cancer Institute and Massachusetts General Hospital in Massachusetts.

Today I want to inform you about a product which has the potential to be a dramatic benefit to the United States and worldwide veterinary health care. It is a scientific breakthrough in oxygen transport therapy. What I want to share with you today is the development of a temporary blood replacement which will fill a need which cannot be met today; a replacement which is inexpensive, abundant in supply and potentially therapeutic in many uses in veterinary medicine and has potential human applications.

The product is a temporary red blood substitute. It is a material (solution) that can take the immediate function of blood, we believe, for all mammalian species: cats, dogs, horses, primates and potentially humans. The product is derived from the

red blood cells of cows: it is a specialized protein of unique properties called Hemoglobin. It is the material that gives blood its red appearance in animals as well as human beings. This material transports oxygen through the circulatory system's veins and arteries and supplies the necessary oxygen to sustain the biochemical activity of life.

The raw material can be obtained either as a byproduct from packaging houses or from an alternate and parallel use of farm animals, for example, a donor herd that could give certain amounts on a regular basis as well as be available for other uses such as milk and milk products.

We are currently undergoing clinical trials at Tufts Veterinary School, the University of Pennsylvania, and the Animal Medical Veterinary Center of New York. Results have been extraordinarily promising thus far. For example, we are already seeing preliminary clinical success with dogs having been saved from death; with horses having undergone transfusion with success and various research animals whose lives have been spared due to the availability of this product. We are also beginning to treat anemic foals, and have also treated small animals and are seeing significant reductions in cancerous tumor growths. We and our research collaborators see an unprecedented potential for growth.

Because of lack of a veterinary blood supply, hundreds of thousands of animals die yearly because of lack of donors. Also,

animals cannot undergo surgery because of lack of a blood supply. An animal can undergo a transfusion with our blood substitute, which lacks toxicity and eliminates the need for cross-matching and continue to function normally, while the animal is reproducing its own blood. We are in the third phase of animal clinical trials, and the data indicates that this product could be an important process/product even for use in humans. We are stalled, however, in the regulatory process from beginning first phase human clinical trials. This problem is not unique just to Biopure. We are facing the problem at the FDA of very hard working and dedicated people not having the scientific expertise to make knowledgeable judgements about this innovative product. This is not meant to criticize the people at FDA but inversely to point to an increasing problem within the system.

To assure the success of our artificial blood materials for the veterinary market, Biopure has invested over $20 million in the technology and has successfully scaled-up a small scale production facility. With this technology and the creation of a commercial production facility, 200,000 units could be manufactured annually. Unfortunately, I must tell you that due to the regulatory constraints mentioned earlier and regulatory uncertainties as well as costs, these facilities could be lost to the United States.

It is critical that Biopure's leading edge biological separation technology (artificial blood) be saved from control by European and Far Eastern countries which are clamoring for the

technology involved in this critical technology. In the last few years, due to regulatory delays and U.S. financial uncertainties and constraints, we have been forced to consider expanding our efforts outside of the United States. This fact could ultimately cause the technology to be lost to West Germany, Africa, Canada and Central America. Today for example we are being aggressively pursued by Pacific Rim countries and corporations to license and invest in our technology. The United States must insure that this critical technology not be lost.

The requirement for a veterinary blood supply can not be overstated. There is no national agency that collects annual blood like American Red Cross does for humans, yet every day there are blood requirements because of animal injury, cancer or necessary life-saving oxygen therapy due to anemia or animal trauma.

As I stated earlier we are already enjoying preliminary clinical successes. We now need to help institutions of the stature in the veterinary world such as Tufts University, the University of Pennsylvania and the Animal Medical Veterinary Center of New York to support a broader, more expansive range of testing in order to bring the product to market.

Further development and testing and ultimate full-scale production of our patent pending artificial blood substitute would answer a need of crisis proportion in the veterinary community and could lead to human use as well as use in the veterinary world.

The obvious potential benefits to human beings in this day of concern over tainted blood are obvious.

I would encourage you and the Subcommittee to provide funding to veterinary institutions of high caliber to continue development and testing of this product.

If you have any questions, Mr. Chairman, I would be glad to respond to them.

TUESDAY, MARCH 27, 1990.

ANIMAL WELFARE ACT

WITNESS

BARBARA PEQUET, AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS

Mr. WATKINS. Our next witness is Barbara Pequet. We appreciate your being here. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. If you would sumarize it we would appreciate it. Thank you.

Ms. PEQUET. Thank you. I do have a synopsis here.

I am testifying today on behalf of the American Society for the Prevention of Cruelty to Animals and its approximate 400,000 contributors nationwide.

I appreciate the chance to talk with you about funding for two specific programs. One is for the USDA's Animal and Plant Health Inspection Service—APHIS—for enforcement of the Animal Welfare Act. The other is the low-input sustainable agriculture program—LISA.

ASPCA was founded in 1866. We are the country's first humane society. We are a private, nonprofit corporation, and we have a wide spectrum of activities, including running animal shelters and veterinary hospitals, human law enforcement, and legislative programs. And we work through the Animalport at JFK Airport, which has to work closely with APHIS.

It is because of our deep concern for all animals for their care and protection that I am here today to urge this subcommittee and the full committee to appropriate $14 million for APHIS to enforce the Animal Welfare Act and $50 million for the USDA's LISA program.

As you well know, Congressman, the Animal Welfare Act is the only comprehensive law for the protection of warm-blooded animals that are used or intended to be used for research testing, experimentation, or exhibition, or as pets. So it is vital that this Act be aggressively enforced.

Unfortunately, APHIS has actually reduced its number of inspections of licensees in 1989, bringing the average number of inspections—of research facilities, anyway—to just over one, and in far too many cases other licensees such as animal exhibitors aren't inspected at all.

Therefore, we hope that this subcommittee will be able to find at least $12 million for APHIS to do broader inspections and more thorough investigations in its basic enforcement efforts.

But we have an additional funding request for a program that we hope is about to be enacted. We really need some work on this. But, in spite of the fact that rats and mice comprise approximately 90 percent of all the animals used in research and testing experimentation, the regulations stipulate that birds, rats, and mice are not to be protected by these minimum requirements in the Animal Welfare Act, even though they are being used as any other warm-blooded animal which is protected would be used.

The Act, itself, doesn't exclude the rats and mice from protection; it merely states that the Secretary has the discretion to determine which warm-blooded animals are being used and how they are being used. As a result, we don't see any justification or legal authority for the Secretary to interpret the Act so that rats and mice, which are clearly being used for these purposes, would be excluded.

In any event, not matter what our interpretation is, USDA has recently expressed an interest in including rats and mice in the coverage of the Animal Welfare Act. They have said in their own report that they will need at least $1.94 million to do additional implementation and enforcement each year for the Act's regulations to apply to the rats and mice.

We, therefore, believe that an additional $2 million needs to go to APHIS for this purpose, bringing that to a total of $14 million for the program.

Just quickly, it should also be noted that USDA has stated in writing that in the near future it will revise the Animal Welfare Act regulations to make it clear that when farm animals are used in non-agricultural purposes only, those animals will also have the protection of the Act. In the past the USDA has taken the position that the Act should exclude all animals. If they could be found in a barn or in a farm then they didn't receive protection, even if they were being used in non-farm or food and fiber-related purposes. So we are glad to see that changed.

But, unfortunately, as the process works, that is going to take additional moneys. We are delighted to see that step forward, but we ask the subcommittee to consider the agency's needs to do an even better job.

In short, given the existing enforcement level has been inadequate and that the agency will be assuming greater responsibilities in the upcoming year, significantly more moneys must be appropriated to the USDA to properly enforce the Animal Welfare Act.

The ASPCA also has a second concern about another program—a good program that needs additional funds. It is this low-input sustainable agriculture, or LISA program, which we would like to see funded at a $50 million level for fiscal year 1991.

The LISA program makes money available to farmers and ranchers who are committed to the development of sustainable methods of farming that protect the environment and the health of the consumer and the economic viability of the farmer. LISA promotes less dependence by farmers on purchased feed additives such as antibiotics and other jobs, and relies on more skilled management.

It is a small but efficient and effective program. It is receiving currently only about $4.5 million in appropriations for fiscal year 1990.

Unfortunately, funding at that level allows only 13 percent of the qualified projects to receive money. The program allows for participation by teams of farmers, private and nonprofit organizations, university research staff, and public agencies to work together to help farmers and consumers and animals. It is managed through USDA's Cooperative Extension Program which dissemi-

nates information to farmers who might benefit from the findings of this low-input sustainable agriculture program.

We believe it is broad-reaching and participatory, and it is a program that should be expanded.

You certainly are aware that there is an increasing public concern about the welfare of animals and about public safety and food and health. This increasing awareness of humane as well as human problems associated with current intensive farming practices is in the news regularly.

The APHIS recently commissioned a report on the relationship between intensive animal husbandry systems and food safety. That report details serious food safety and other hazards created by intensive methods of raising animals.

I have copies of this report with me here, and there is a copy available behind the desk. It is a bit thick for the record, but if you have an interest I would be glad to have you look at it and I will have one forwarded.

Mr. WATKINS. Thank you.

Ms. PEQUET. The report examines the various species of animals used for food and details the health problems of the animals and the potential risks to the consumer as a result of these intensive farm practices. We hope you will be convinced from the report that more innovative farming methods must be pursued both for the health protection of the public and for animals.

The LISA program is, if it is sufficiently funded, a program that could have some very long-range benefits. One example of the sorts of work that LISA moneys can do is a project at the University of Minnesota which involves the construction and study of an alternative swine unit that provided the sows with straw bedding, solid floors, and room to move around, with minimal use of drugs, and with absolutely no antibiotics. It is demonstrative of the innovative farming practice that provides benefits to the consumer and animals.

Our hope is that more of these kinds of projects can be funded and that you can consider both appropriations of $14 million for APHIS and $50 million for the LISA program.

Mr. WATKINS. We thank you so much for that testimony. Yes, there is a lot more discussion being made on this issue every year. I think those points are being——

Ms. PEQUET. It is certainly high in the public's concern.

Mr. WATKINS. Yes. Thank you so much.

Ms. PEQUET. Thank you.

[Ms. Pequet's prepared statement follows:]

ASPCA

America's First Humane Society

Testimony

in Support of Increased Appropriations for
Enforcement of the Animal Welfare Act and
Expansion of the Low-Input Sustainable Agriculture Program

Before the

Appropriations Subcommittee on Agriculture,
Rural Development, and Related Agencies

By
Barbara Pequet
Director, Government Relations

March 27, 1990

THE AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS
441 East 92nd Street • New York, N.Y. 10128 • (212) 876-7700 • Fax (212) 348-3031

My name is Barbara Pequet and on behalf of The American Society for the Prevention of Cruelty to Animals and its approximately 400,000 contributors nationwide, I would like to thank you for the opportunity to testify today regarding funding for two programs: the USDA's Animal and Plant Health Inspection Service (APHIS) for enforcement of the Animal Welfare Act; and the Low-Input Sustainable Agriculture (LISA) program.

Founded in 1866, the ASPCA, America's first humane society, is a private, not-for-profit corporation currently operating animals shelters, veterinary hospitals, humane law enforcement, education and legislative programs, and an Animalport at John F. Kennedy International Airport that cooperates very closely with the Animal and Plant Health Inspection Service. We are dedicated to securing protection for all animals and preventing unnecessary pain and suffering to them whether they be in the wild, laboratories, zoos, circuses, or other exhibitions, kept as pets, or raised for food. And it is because of these deep concerns for the care and protection of all animals that I am here today to urge Congress to appropriate $14 million for APHIS to enforce the Animal Welfare Act and $50 million for the USDA's Low-Input Sustainable Agriculture program.

ANIMAL WELFARE ACT

As this committee well knows, the Animal Welfare Act is the only comprehensive law for the protection of warm-blooded animals used or intended for use for experimentation, research, testing, exhibition purposes or as pets. Therefore, it is vital that this Act be stringently enforced. Yet due to budgetary constraints, the USDA actually reduced its number of inspections of licensees in 1989. The average number of inspections of research facilities was just over one and other licensees, such as some exhibitors, were never inspected at all.

In order to ensure compliance with the law, there must be strong aggressive enforcement. And in 1990 when new regulations will be promulgated by the USDA pursuant to the 1985 amendment of the Act requiring exercise of dogs and a physical environment adequate to promote the psychological well-being of primates, the need for monitoring will be that much more essential.

Furthermore, given that rats and mice comprise approximately ninety percent of the animals used in research, testing and experimentation, the ASPCA strongly believes that the USDA must begin to enforce the Animal Welfare Act to provide protection for these animals. The Act itself does not exclude them from the scope of protection and only gives the Secretary of Agriculture the discretion to determine which warm-blooded animals are being used or are intended for used for research, testing,

experimentation, exhibition purposes or as pets. Since rats and mice clearly are being used for these purposes, we see no justification or legal authority to interpret the Act so as to exclude these species.

In any event, the USDA recently has expressed an interest in covering rats and mice under the Animal Welfare Act. According to the USDA's written "Preliminary Analysis of the Potential Impacts of Including Rats and Mice Under the Animal Welfare Act," the agency estimates that it will need at least $1.94 million per year in additional funding to implement and enforce changes in the Act's regulations relating to the housing, care, treatment and transportation of rats and mice. The Agency stated in its analysis that the $1.94 million figure "is a conservative estimate of the agency's needs for additional funds" for this purpose.

It also should be noted that the USDA has stated in writing that in the very near future it will revise the Animal Welfare Act regulations to make it clear that when farm animals are used for non-agricultural purposes, they too will receive protection under the Act. In the past, the USDA took the position that the Act excluded all farm animals. Therefore, the USDA will need additional funds to enforce these new regulations as well.

In sum, given that the existing enforcement level has been inadequate and that the Agency will be assuming greater responsibilities in the upcoming year in overseeing compliance with the soon-to-be promulgated final regulations on exercise for

dogs and living quarters for primates and with the inclusion of non-agricultural farm animals and, we hope, rats and mice under the Act, significantly more monies must be appropriated to the USDA to properly enforce the Animal Welfare Act.

Low-Input Sustainable Agriculture Program

The ASPCA requests that the Low-Input Sustainable Agriculture program be funded at a $50 million level for FY 1991. The LISA program makes money available to farmers and ranchers committed to the development of sustainable methods of farming that protect the environment, the health of the consumer and the economic viability of the farming industry.

It is a small project receiving only $4.45 million in appropriations for FY 1990 but represents a well-planned, well-executed program that if properly funded could have a substantial beneficial impact on farmers, the public and animals. The program allows for participation by teams of farmers, private non-profit organizations, university research staff, and public agencies which together review proposals. In addition, there is a system for the dissemination of information through the USDA Cooperative Extension Service to farmers who might benefit from the findings of a low-input sustainable agriculture program. The result is a broad-reaching and participatory program that should be encouraged.

In addition to the humane problems associated with current intensive farming practices, most notably confinement systems which deprive animals of the ability even to make normal postural adjustments, there are human problems associated with these practices as well. The American Society for the Prevention of Cruelty to Animals recently commissioned the preparation of a report on the relationship between intensive animal husbandry systems and food safety. The report details serious food safety and other hazards created by intensive methods of raising animals. Copies of this report are being distributed to you today for your review. One of the reports conclusions is as follows:

> The high installation costs and operating overhead associated with these systems force producers to maintain large numbers of animals in crowded conditions. Large, dense populations of animals confined indoors support large pools and varieties of pathogens and render the animal vulnerable to disease outbreaks. Population size and density disturb normal social patterns and add to stresses that depress growth and reproductive performance and increase susceptibility to disease.
>
> To hold down diseases and to enhance productivity without abandoning the advantages of the intensive/confinement system, producers resort to commercial drug, hormone and chemical applications, as these often are the most cost effective and bring about the most rapid and dramatic results. Many of these compounds are either highly bioactive or toxic fn humans and residues of them can remain in animal food products. Moreover, they tend to suppress animal diseases and symptoms without eliminating the intensive operation's pathogen pool. Many of the pathogens are zoonotic, that is, they can communicate diseases to humans. Thus two human health hazards--toxic residues and food-borne disease--are woven into the food chain at the earliest possible point.

The report further discusses the various species of animals used for food and goes into detail about the health problems of the animals and the potential risks to the consumer as a result of intensive farm practices. We know you will find the report to be useful and hopefully you will be convinced that more innovative farming methods must be pursued both for the protection of the public and the animals.

The LISA program, by promoting less dependence by farmers on purchased feed additives such as antibiotics and other drugs and by promoting a reliance on more skilled management instead can and if sufficiently funded will have a large and long overdue beneficial impact on American animal agriculture. The project at the University of Minnesota, for example, which was funded by LISA monies, and which involved the construction and study of an alternative swine unit that provided the sows with straw bedding, solid floors and room to move around with minimal use of drugs and no antibiotics, is demonstrative of an innovative farming practice that provides benefits to the consumer and the animals.

Our hope is that more projects of this kind will be funded by the LISA program. And in order to encourage even more farmers who are involved in animal agriculture to partake in this program, we also are hopeful that the language authorizing LISA will be modified so that animal agriculture is specifically mentioned.

Humane and human concerns in the area of intensive farm animal husbandry systems must be addressed. Sufficient funding of the Low-Input Sustainable Agriculture program is one important way of promoting safer and more humane systems and of enhancing and protecting family farmers who quickly are being replaced by large producers. The ASPCA, therefore, urges you to substantially increase its funding to the $50 million level.

Thank you, Mr. Chairman, for this opportunity to support low-input sustainable animal agriculture, as well as to request at least $14 million in appropriations for APHIS to better and more inclusively enforce the humane provision of the federal Animal Welfare Act.

TUESDAY, MARCH 27, 1990.

CARE OF LABORATORY ANIMALS

WITNESS

DR. MELINDA NOVAK, AMERICAN PSYCHOLOGICAL ASSOCIATION

Mr. WATKINS. Next we will hear from Dr. Melinda Novak.

Again I might mention that we accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. If you can summarize your statement we would appreciate it.

Dr. NOVAK. Good afternoon, Mr. Chairman and members of the subcommittee. I am Professor Linda Novak, a research psychologist from the University of Massachusetts, and Chair of the American Psychological Association's Committee on Animal Research and Ethics.

On behalf of APA, a scientific and professional organization representing over 102,000 psychologists, I thank you for the opportunity to testify on the fiscal year 1991 budget for the Animal and Plant Health Inspection Service of the United States Department of Agriculture.

Included among APA's membership are research psychologists, such as myself, who use animals in their research—research that increases our understanding of cognition and memory, mental illness, drug abuse and addiction, and human and animal behavior. APA has been concerned about the care and welfare of laboratory animals since 1925, when a committee was formed to help set policy for the humane use of animals in psychological research. Simply put, good science requires good animal care.

As scientists, we are also morally and ethically obligated to ensure the human treatment of the animals that are necessary for research. Scientists are also responsible to the public, who are concerned about the care and use of animals and research. The inspections carried out by APHIS at over 1,300 research facilities are an important part of assuring the public that scientists are meeting this obligation. Unannounced APHIS inspections at animal research facilities ensure compliance with the letter and the spirit of the Animal Welfare Act.

The Animal Welfare Act, passed in 1966 and most recently amended in 1985, regulates the use of animals in research. APHIS enforces the Act through licensure, registration, and annual inspections. Institutions are required to meet standards for handling, housing, feeding, sanitation, and veterinary care. These standards have been recently revised to reflect changes Congressionally mandated by the 1985 amendments. Estimates from the National Association of Biomedical Research are that it will cost the research community close to $2 billion to implement the changes proposed by APHIS.

When the last part of the regulations to implement the 1985 amendments to the Animal Welfare Act are made final some time this year, APHIS inspectors will have the difficult task of assessing the psychological wellbeing of non-human primates used in research—a Congressionally mandated criterion. It is not yet clear

how APHIS will implement this part of the 1985 amendments, but it is clear that it will require a change and an improvement in the training of APHIS inspectors.

For this and other reasons, APA recommends $12 million be appropriated for fiscal year 1991 for the APHIS animal welfare inspection program. Past levels of funding for this program, as well as the fiscal year 1991 budget request, have been inadequate to allow the agency to carry out its mandated responsibilities in a manner consistent with current knowledge of animal welfare, animal health, and animal behavior. This is especially true for fiscal year 1991 when APHIS inspectors will have considerable added responsibilities.

APA is especially concerned about the quality of the inspection process and the training of inspectors. The continuation of the nation's behavioral and biomedical research using animals depends, in part, on this inspection process. It is critically important for research facilities using animals to be above reproach in order to keep the public's support for the vital research carried out in the nation's laboratories. This is possible only if the public is convinced that research animals are necessary and that they are treated as humanely as possible.

APA is pleased to see that the Administration has recommended an increase over the fiscal year 1990 budget, but feels strongly that it is not adequate to meet the agency's needs and responsibilities. We are not alone in our concern about this matter. A group of close to 100 scientific and animal welfare organizations have joined to sign a letter requesting an increase in APHIS' 1991 budget to $12 million. This money is needed for several purposes.

The first concerns the number of inspectors. The number of inspectors in APHIS' regulatory enforcement and animal care program is simply inadequate. There should be enough inspectors to provide at least an average of two inspections per year for not only the estimated 1,300 research facilities, but also 3,800 licensed dealers, 1,400 exhibitors, and 400 intermediate animal handlers also covered by the Animal Welfare Act. APHIS, itself, has said that four inspections per year would be an optimum—a goal that seems less and less achievable.

More inspectors will also be needed due to the increased demands on their time to not only adequately inspect animal research facilities, themselves, but to examine the more detailed paperwork that must now be kept to comply with parts one and two of the animal welfare regulations. More inspectors will also be needed if they are to receive adequate training and retraining. As inspectors spend more time in training, and those in the field are retrained, there will have to be an increase in their numbers if adequate enforcement is to be maintained at even current levels.

The second purpose is for inspector training. More important than the number of inspectors is the training they receive to enforce a complex set of regulations. While the expertise to train inspectors exists within the scientific and veterinary communities, APHIS has not yet been able to systematically take advantage of this valuable resource.

With due respect to the capabilities of the APHIS training staff, as well as to training officials from other agencies, insufficient

breadth and depth of training within the inspection service continues to undermine the program's credibility within the scientific community and the public's confidence in Federal enforcement of the Animal Welfare Act.

Effective enforcement of the Act is a difficult task that demands significant expertise in behavioral and psychological variables and laboratory animal medicine for the various species of animals used in research. APA is particularly concerned about how APHIS will assess the psychological wellbeing of nonhuman primates used in research. This is mandated in the 1985 amendments to the Act, and the research community anxiously awaits APHIS interpretation. It will surely require inspectors to make sophisticated judgments about animals with little to no specific training in the behavioral sciences.

As a researcher who has spent a considerable amount of her professional life studying the behavior of nonhuman primates, I can assure you that training inspectors to adequately judge the psychological wellbeing of primates will be costly, time consuming, and require frequent retraining to take advantage of the latest scientific information.

APA, as well as other scientific and animal welfare organizations, strongly urges that $12 million be appropriated to APHIS' animal welfare program to help maintain a consistently high-quality inspection program. This funding is required if APHIS is to fulfill its responsibilities under the Animal Welfare Act.

In recent years, this subcommittee has preserved the APHIS animal welfare program, despite efforts to eliminate or substantially reduce its responsibilities. You recognized the need for a Federal program to enforce national standards of laboratory animal care and use. We ask you now to provide funds not only to preserve the status quo, but to assure APHIS' ability to enforce valid and consistent standards.

APA recommends that $12 million be appropriated for fiscal year 1991 for the APHIS animal welfare program to first ensure that an adequate number of inspectors are available to inspect the 6,900 registered and licensed animal facilities — especially the 1,300 research facilities; and, second, provide the vitally-needed training of APHIS inspectors, especially in the behavioral sciences, to ensure that adequate evaluations are made of the several species of animals used in research—especially nonhuman primates vital to many areas of biomedical and behavioral research.

APA shares with the rest of the research community a commitment to a strong animal welfare program. we believe a vital component of this commitment is an adequately-funded animal welfare program at APHIS.

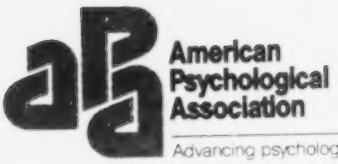
Mr. Chairman, just let me say we are at a critical juncture. I believe it is vitally important that we ease the concerns and allay the fears of the public about animal research.

Thank you for your consideration. I can answer any questions.

Mr. WATKINS. Thank you very much for your testimony. We appreciate your concern.

I am going to ask my good friend Congressman Akaka to assume the Chair, if that would be all right.

[Dr. Novak's prepared statement follows:]


American
Psychological
Association
Advancing psychology as a science, a profession, and as a means of promoting human welfare

TESTIMONY OF

MELINDA NOVAK, PH.D.

Professor

Department of Psychology

University of Massachussetts at Amherst

on behalf of

THE AMERICAN PSYCHOLOGICAL ASSOCIATION

before the

UNITED STATES HOUSE OF REPRESENTATIVES

Committee on Appropriations

Subcommittee on Rural Development, Agriculture, and Related Agencies

on the subject of the

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANIMAL WELFARE PROGRAM

27 March 1990

The Honorable Jamie L. Whitten, Chair
2362 Rayburn House Office Building

1200 Seventeenth Street, N.W.
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(202) 955-7600

Mr. Chairman, Members of the Subcommittee, I am Dr. Melinda Novak, a research psychologist from the University of Massachussetts and Chair of the American Psychological Association's (APA) Committee on Animal Research and Ethics (CARE). On behalf of APA, a scientific and professional organization representing over 102,000 psychologists, I thank you for the opportunity to testify on the fiscal year 1991 budget for the Animal and Plant Health Inspection Service (APHIS) of the United States Department of Agriculture.

Included among APA's membership are research psychologists, such as myself, who use animals in their research -- research that increases our understanding of cognition and memory, mental illness, drug abuse and addiction, and human and animal behavior. APA has been concerned about the care and welfare of laboratory animals since 1925, when a committee was formed to help set policy for the humane use of animals in psychological research. Good science requires good animal care.

As scientists we are also morally and ethically obligated to ensure the humane treatment of the animals that are necessary for research. Scientists are also responsible to the public, who are concerned about the care and use of animals in research. The inspections carried out by APHIS at over 1,300 research facilities are an important part of assuring the public that scientists are meeting this obligation. Unannounced APHIS inspections at animal research facilities ensure compliance with the letter and spirit of the Animal Welfare Act.

The Animal Welfare Act, passed in 1966 and most recently amended in 1985, regulates the use of animals in research. APHIS enforces the Act through licensure, registration, and annual inspections. Institutions are required to meet standards for handling, housing, feeding, sanitation, and veterinary care. These standards have been recently revised to reflect changes Congressionally mandated by the 1985 amendments. Estimates from the National Association of Biomedical Research are that it will cost the research community close to $2 billion to implement the changes proposed by APHIS.

When the last part of the regulations to implement the 1985 amendments to the Animal Welfare Act are made final sometime this year, APHIS inspectors will have the difficult task of assessing the psychological well-being of non-human primates used in research -- a Congressionally mandated criteria. It is not yet clear how APHIS will implement this part of the 1985 amendments, but it is clear that it will require a change and an improvement in the training of APHIS inspectors.

For this, and other reasons, APA recommends $12 million be appropriated for FY 1991 for the APHIS animal welfare inspection program. Past levels of funding for this program, as well as the fiscal year 1991 budget request, have been inadequate to allow the agency to carry out its mandated responsibilities in a manner consistent with current knowledge of animal welfare, animal health, and animal behavior. This is especially true for FY 1991, when APHIS inspectors will have added responsibilities.

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APA is especially concerned about the quality of the inspection process and the training of inspectors. The continuation of the nation's behavioral and biomedical research using animals, depends in part, on this inspection process. Like Caesar's wife, research facilities using animals must be above reproach in order to keep the public's support for the vital research carried out in the nation's laboratories. This is possible only if the public is convinced that research animals are necessary, and that they are treated as humanely as possible.

IMPACT OF ADMINISTRATION'S BUDGET RECOMMENDATION

APA is pleased to see that the administration has recommended an increase over the FY 1990 budget, but feels strongly that it is not adequate to meet the agency's needs and responsibilities. We are not alone in our concern about the inadequacy of the animal welfare budget. A group of close to one hundred scientific and animal welfare organizations have joined to sign a letter requesting an increase in APHIS's FY 1991 animal welfare budget to $12 million. This money is needed for several purposes.

NUMBER OF INSPECTORS

The number of inspectors in APHIS's Regulatory Enforcement and Animal Care (REAC) program is inadequate. There should be enough inspectors to provide at least an average 2.0 inspections per year for not only the estimated 1,300 research facilities, but also 3,800 licensed dealers, 1,400 exhibitors, and 400 intermediate animal handlers also covered by the Animal Welfare Act. APHIS itself has said that 4.0 inspections per year would be optimum -- a goal that seems less and less achievable.

More inspectors will also be needed due to the increased demands on their time to not only adequately inspect animal research facilities themselves, but to examine the more detailed paperwork that must now be kept to comply with Parts I & II of the Animal Welfare Regulations. More inspectors will also be needed if they are to receive adequate training and re-training. As inspectors spend more time in training, and those in the field are re-trained, there will have to be an increase in their numbers if adequate enforcement is to be maintained at even current levels.

INSPECTOR TRAINING

More important than the number of inspectors is the training they receive to enforce a complex set of regulations. While the expertise to train inspectors exists within the scientific and veterinary communities, APHIS has not yet been able to systematically take advantage of this valuable resource. With due respect to the capabilities of the APHIS training staff, as well as to training officials from other agencies, insufficient breadth and depth of training within the inspection service continues to undermine the program's credibility within the scientific community and the public's confidence in Federal enforcement of the Animal Welfare Act.

American Psychological Association
FY 1991 APHIS Appropriations Testimony
U.S. House of Representatives

Effective enforcement of the Act is a difficult task that demands significant expertise in behavioral and psychological variables, and laboratory animal medicine for the various species of animals used in research. APA is particularly concerned about how APHIS will assess the psychological well-being of non-human primates used in research. This is mandated in the 1985 amendments to the Act and the research community anxiously awaits APHIS interpretation. It will surely require inspectors to make sophisticated judgements about animals with little, to no, specific training in the behavioral sciences. As a researchers who has spent a considerable amount of her professional life studying the behavior of non-human primates, I can assure you that training inspectors to adequately judge the psychological well-being of primates will be costly, time consuming, and require frequent re-training to take advantage of the latest scientific information.

RECOMMENDATIONS

APA, as well as other scientific and animal welfare organizations, strongly urge that $12 million be appropriated to APHIS's animal welfare program to help maintain a consistently high quality inspection program. This funding is required if APHIS is to fulfill its responsibilities under the Animal Welfare Act.

In recent years, this Subcommittee has preserved the APHIS animal welfare program, despite efforts to eliminate or substantially reduce their responsibilities. You recognized the need or a Federal program to enforce national standards of laboratory animal care and use. We ask you now to provide funds not only to preserve the status quo, but to assure APHIS's ability to enforce valid and consistent standards.

APA recommends that $12 million be appropriated for FY 1991 for the APHIS animal welfare program to:

1) Ensure that an adequate number of inspectors are available to inspect the over 6,900 registered and licensed animal facilities -- especially the 1,300 research facilities, and;

2) Provide the vitally needed training of APHIS inspectors, especially in the behavioral sciences, to ensure that adequate evaluations are made of the several species of animals used in research -- especially non-human primates vital to many areas of biomedical and behavioral research.

APA shares with the rest of the research community a commitment to a strong animal welfare program. We believe a vital component of this commitment is an adequately funded animal welfare program at APHIS.

Thank you very much for your consideration. I will be happy to answer any questions you might have.

TUESDAY, MARCH 27, 1990.

HORSE PROTECTION ACT

WITNESS

RUSSELL GASPAR, AMERICAN HORSE PROTECTION ASSOCIATION, INC.

Mr. AKAKA [assuming Chair]. May I call on Robin Lohnes, American Horse Protection Association.

Welcome. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. We would appreciate it if you could summarize. Thank you.

Mr. GASPAR. For the record, my name is Russell Gaspar. I am the General Counsel of the American Horse Protection Association. I am substituting today for Ms. Lohnes.

Mr. Chairman, AHPA is a human society interested in the welfare of horses and for virtually its entire existence it has been interested in the Horse Protection Act, an act to stop soring of show horses, and principally Tennessee walking horses.

For fiscal year 1991, APHIS has requested an appropriation of $359,000, which is an increase from fiscal year 1990 of about $185,000.

That is a strong step in the right direction, Mr. Chairman, but, unfortunately, we think it is inadequate for the current needs of the program and we would ask the committee to consider an appropriation of $500,000.

For the last eight years the Horse Protection Act Appropriation has been in the range of about $160,000 a year, which is very, very small.

The Department of Agriculture sends its veterinary representatives to about 25 percent of the horse shows that are the principal focus of the Act. The actual cost of doing this has been about $300,000 to $350,000, despite the fact that the appropriations level has only been about $160,000.

So this year's request really isn't a request that reflects an additional degree of enforcement. It is simply a ratification of what has been going on for many years due to under-funding of the program.

But the enforcement, Mr. Chairman, is still vitally necessary and really does need to be increased because the soring of show horses—and particularly Tennessee walking horses—still persists in rather sophisticated fashions that escape superficial detection.

AHPA believes that the program requires four things.

First and foremost, it needs more Agriculture Department presence at horse shows. The data that USDA develops from its presence shows that the industry-based designated qualified persons who inspect horses prior to the time that they show disqualify more horses as being sore when USDA is present than when USDA is not present. Clearly, the industry-based enforcement program, which is the heart of the Horse Protection Act, works much more effectively when USDA is there to monitor how those people do their jobs.

Secondly, the training of these DQPs by USDA personnel needs to be more extensive and better. There is a great deal of evidence in USDA's files that their performance is, at best, inconsistent at

times and sometimes downright horrible, passing horses to go into the show ring that clearly ought to be excluded.

Third, the Agriculture Department, itself, needs to speed up its own civil enforcement efforts. I was speaking to an Office of the General Counsel attorney only last week who was telling me he was just prosecuting a case from a 1985 show. Clearly the better part of four and a half or five years between the violation is written and the time it is actually adjudicated is far too long to meet the needs of basic justice and to provide that there is an effective deterrent to soring under the Act.

Lastly, there are a large number of vacancies on the staff of the regulatory enforcement and animal care staff, which is the branch of APHIS that enforces the Horse Protection Act. APHIS is still relying on veterinary services personnel to enforce the Horse Protection Act, and, while many of those people are good, it is no longer their principal responsibility within APHIS.

The react vacancies need to be filled, and the people who fill those vacancies need to be trained.

All of these things, Mr. Chairman, are going to require more money than APHIS has been getting over the past eight years, and, frankly, we think more money than the program has requested for 1991.

AHPA has been litigating certain regulatory matters against the Agriculture Department for a number of years now, and in a court hearing last week everybody—the Government, AHPA, and even the walking horse people, themselves—agreed that one of the biggest problems to effective enforcement of the Horse Protection Act is the lack of sufficient funding for on-the-ground enforcement.

We believe that an appropriation of $500,000, which is the maximum authorized by the Horse Protection Act, is appropriate this year so that APHIS can try to attend about 40 percent of the horse shows and sales that are the principal focus of the Act. This would be an important step toward making up for the ground that has been lost over the last eight years or so and would be an important step after 20 years to fulfill the objective of the Horse Protection Act, which is to stop the painful training methods inflicted on these animals.

This is a very minor part of the APHIS budget. In terms of actual dollars it is a very small number of dollars; but in terms of the impact it can have on enforcement of the Horse Protection Act, it is truly vital. The money is long overdue, and, although AHPA does support the $359,000 request, we very seriously ask that the committee give important consideration to increasing that request to $500,000 for 1991.

Thank you, Mr. Chairman.

Mr. AKAKA. Thank you very much for your testimony. This will be helpful to the committee. We thank you very much.

Mr. GASPAR. Thank you, sir.

[Mr. Gaspar's prepared statement follows:]

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THE ONLY NON-PROFIT ORGANIZATION DEDICATED TO THE WELFARE OF HORSES, BOTH WILD AND DOMESTIC.

Before the

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

of the

HOUSE COMMITTEE ON APPROPRIATIONS

Statement of the American Horse Protection Association, Inc. Concerning Fiscal Year 1991 Appropriations for the Animal and Plant Health Inspection Service

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March 27, 1990

Before the

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

of the

HOUSE COMMITTEE ON APPROPRIATIONS

Statement of the American Horse Protection Association, Inc.
Concerning Fiscal Year 1991 Appropriations
for the Animal and Plant Health Inspection Service

The American Horse Protection Association, Inc. appreciates this opportunity to express its views concerning the Fiscal Year 1990 appropriation for the Animal and Plant Health Inspection Service's program to enforce the Horse Protection Act. AHPA is a nonprofit national humane organization dedicated to the welfare of horses, both wild and domesticated. Since its incorporation in 1966 the prevention of abuse to show horses, and especially to Tennessee Walking Horses, has been among its principal areas of interest and concern.

APHIS has requested an appropriation of $359,000 for its Horses Protection Act enforcement program during FY 1991, an increase of approximately $185,000 over the FY 1990 appropriation. AHPA believes that the request is an important step in the right direction, and is the very least that should be approved. Nevertheless, it is still too low to allow APHIS to do what is necessary to meet the objectives of the Act, especially in light of the low funding levels of the last eight years and changes brought about by the APHIS reorganization last year. AHPA therefore recommends, for the reasons discussed below, that the Committee appropriate the full $500,000 authorized by the Horse Protection Act.

Concern for show horse abuse -- particularly among Tennessee Walking Horses and similar gaited breeds -- led Congress to pass the Horse Protection Act in 1970. Pub. L. No. 91-570, 15 U.S.C. §1821 et seq. "Soring", as the abuse is commonly known, involves the infliction of pain to the horse's feet and legs to accentuate its naturally animated gait and to hasten the training process. The Act was substantially amended in 1976 to expand the kinds of conduct that were prohibited and to strengthen the Agriculture Department's enforcement capabilities. Pub. L. No. 94-360.

Throughout the history of the Act, Congress and the Agriculture Department have understood that there is a close relationship between soring and the kinds of "action devices" and shoes that a horse wears, especially if the effects of the

devices and shoes are accentuated by making the animal's feet and legs painful through the application of chemical irritants or blistering agents.[1] As a result, enforcement under the Act has focused in part on prohibiting the use of equipment and techniques that reasonably can be expected to sore a horse. APHIS field enforcement at horse shows is intended to detect horses that show evidence of being in pain prior to or after showing.

In recent years APHIS personnel have attended only about 120 of the 500 or more horses shows and sales that are the principal focus of the Horse Protection Act program. Their attendance is not always for the purpose of enforcement; APHIS personnel sometimes merely monitor the performance of Designated Qualified Persons (15 U.S.C. §1823(a)) appointed by horse show management to inspect horses. AHPA understands that actual spending for this level of activity has been substantially in excess of past appropriations levels -- approximately $300,000 - 350,000 per year, compared to appropriations in the range of $160,000. Thus, the proposed increase for FY 1991 will not result in any real increase in enforcement effort; it will simply maintain the current level, which is inadequate.

The sophistication of soring techniques now in use and the weaknesses of current examination methods used to detect them requires a more vigorous APHIS presence at horse shows. In the early 1970s sore horses often had open wounds on their lower front legs; today, visible evidence of soring is usually absent or concealed, and horses are trained, or "stewarded", not to react to pain when their legs are examined. In addition, industry self-regulation constitutes most of the enforcement under the Act. This has produced an inconsistent pattern of detection of sore horses: DQP disqualifications rates are substantially higher at shows when APHIS personnel are present than they are at shows attended by DQPs alone.

This clearly suggests that an increased APHIS presence is an essential element to effective enforcement of the Act. Unfortunately, the requested appropriation will do little or nothing to change the current situation.

Under the circumstances, APHIS enforcement must be made substantially more comprehensive and effective. It is necessary

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[1] The most common action device is a chain which is worn bracelet-fashion around the horse's lower front legs, so that it strikes the pastern area as the horse strides. Under current regulations the weight of the chain may not exceed six ounces.

to bring more horse shows within the scope of direct USDA enforcement, to insure that DQP inspections are adequate and to have as many horses as possible inspected by APHIS personnel. In addition, pre-and post-show examination techniques must be made more thorough and reliable to prevent the use of soring practices that have thus far largely escaped detection. Finally, civil and criminal enforcement actions must be prosecuted more often, more vigorously and more quickly.

Better enforcement is especially important because APHIS is relying on enforcement to break the link between chemical soring of the pastern area and the use of action devices. In a rulemaking notice published last year [54 Fed. Reg. 7177 (Feb. 17, 1989)] it acknowledged that any action device will cause a horse to suffer pain if it strikes an area that previously has been made sore. APHIS justified promulgating a rule that permits action devices by contending that pre-show inspections will detect and disqualify those horses that have been sored.

A second important objective of the Horse Protection Act appropriation is the training of additional personnel for the Regulatory Enforcement and Animal Care staff. Despite the late 1988 reorganization of APHIS, during 1989 REAC relied to a large extent on Veterinary Services personnel to enforce the Horse Protection Act. This will apparently continue during 1990.

AHPA believes that the proposed appropriation is not adequate for APHIS to fill REAC staff vacancies and train new employees in Horse Protection Act work, while at the same time covering a sufficient number of horse shows to insure a reasonable degree of enforcement. The result will be to frustrate the very beneficial objectives of the reorganization. It is likely that, three years after the reorganization went into effect, REAC will still be borrowing Veterinary Services personnel to perform Horse Protection Act responsibilities -- a situation that can only perpetuate inconsistent and ineffective enforcement.

For these reasons, AHPA recommends that FY 1991 funding be increased to the $500,000 authorized by the Horse Protection Act. The level of enforcement activity in the budget justification will require funding of at least $300,000; this will merely maintain current enforcement, not increase it. In this regard, AHPA urges the Subcommittee to recommend that APHIS reallocate sufficient FY 1990 funds to insure that Horse Protection Act enforcement is not cut back during the current fiscal year.

The remainder of the appropriation should be made available to fill staff vacancies, to develop new inspection techniques (e.g., to detect whether illegal substances have been used on the

horse's limbs to enhance or inhibit pain), and to purchase new detection equipment, including thermography equipment. As long ago as 1975, APHIS concluded that thermographic detection of soring was the single most reliable and objective enforcement tool available. APHIS used the thermograph during the late 1970s, but discontinued its use in about 1981. Since then, improvements in thermographic technology have produced more portable equipment, as well as equipment that can better record examination results on videotape or compact disc for use in evidence. Because the physical signs of soring today are often absent or disguised, thermographic measurement of the heat and inflammation indicative of injury in underlying tissues is a vital enforcement tool that must be restored to the Horse Protection Act program.

When the Horse Protection Act was amended in 1976, Congress reaffirmed its commitment to end soring. Last year, AHPA hoped that the rulemaking required by its litigation would help achieve that goal by eliminating many devices and techniques that could be used to sore horses. Unfortunately, the final rulemaking has not gone far enough. In any event, it cannot be an adequate substitute for a more comprehensive enforcement program that is as sophisticated in its examination and detection methods as soring techniques have become. That program requires more funding than APHIS has received in the past, and the Association urges the Subcommittee to approve it.

TUESDAY, MARCH 27, 1990.

ANIMAL WELFARE ACT

WITNESS

BILL COTREAU, SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION

Mr. AKAKA. The Society for Animal Protective Legislation will be the next group we will hear from.

Please state your name. We will accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

Mr. COTREAU. My name is Bill Cotreau. I am a research associate with the Society for Animal Protective Legislation. I am speaking today for Christine Stevens. She had another engagement and couldn't be here.

I have given you some pieces of paper. One is the letter that other people have referred to in their testimony which has been signed on to by, I believe, 120 scientific and human organizations, as well as industry, showing their support for an appropriation of $12 million for the enforcement of the Animal Welfare Act by the Animal and Plant Health Inspection Service. I think you have heard enough about that for today.

The second thing that I want to get to shows why we are so concerned about the enforcement of the Animal Welfare Act. I have handed you photocopies of pictures taken at a laboratory dog dealer's facility in California in 1985. This facility was atrocious. There were dogs cannibalizing each other because they weren't being fed. They weren't being watered. And I bring to your attention that last year only 75 percent of all dog dealers in the country were inspected.

The reason why we are so driven to insist on effective enforcement of the Animal Welfare Act is that we don't want this to be one of the 25 percent of the dealers not inspected. We feel that chance violates the public's trust, it violates the reason why the Animal Welfare Act was passed.

So we urge this subcommittee to meet our request for a $12 million appropriation of the Animal Welfare Act in order to ensure that APHIS can do the job it is supposed to do, which is preventing occurrences like the one in the pictures that I gave you.

The increased funding will allow for a greater number of inspectors, and we are hoping that we will eventually get to the goal of four inspections per year of registered sites, because there are over 9,000 registered research sites and dog dealer facilities of all of the facilities which APHIS is required to inspect.

The other point that I wish to raise is that we support the American Horse Protection Association in its request for $450,000. The appropriation of $161,000 for the Horse Protection Act last year was far too low, and even under situations of greatest ecoromy it was impossible to fully enforce the law or at all adequately enforce the law.

As my testimony is being entered into the record, I stand for questions.

Mr. AKAKA. Thank you very much, Mr. Cotreau. This will be helpful to the committee and I thank you very much.

Mr. COTREAU. Thank you.

[The prepared statement follows:]

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Statement in Support of
$12 Million for Enforcement of the Animal Welfare Act
and $450 Thousand for Enforcement of the Horse Protection Act

for FY91

submitted to the House Appropriations Subcommittee
on Rural Development, Agriculture, and Related Agencies

by Christine Stevens, Secretary

March 27, 1990

A large number of animal protective organizations and biomedical organizations have joined together to request, as a matter of urgency, a modest increase in funding for enforcement of the Animal Welfare Act. The Act is the nation's primary legislation on the subject. It was passed by overwhelming public demand, and each of its strengthening and broadening amendments have had similar support. Americans expect that the law will be strictly enforced.

Last year, it was not. In a shocking failure to inspect the premises of animal dealers, a full 24.8% were not visited even once! They should be inspected three times a year in order to maintain the minimum standards required by the Act. The law specifies that if a "deficiency" (as violations as serious as death from starvation are euphemistically termed) is found, a return inspection must be made till all deficiencies are corrected. Obviously, this did not occur in the case of nearly one-quarter of the dealers. The law has been broken and the American public has been misled because insufficient funds were appropriated last year to enforce the law.

I wish to submit a few photographs of dog dealers' premises to this distinguished subcommittee to ensure your understanding of the seriousness of the situation. Here are photographs of premises of a dealer found guilty by the U.S. Department of Agriculture of grossly violating housing, sanitation and veterinary care standards. The dealer also concealed the source of animals by consistently giving wrong information about them and refused inspectors and law enforcement officers access to his business records.

Suppose this was one of the dealers who were never visited during the entire course of the year! I want to emphasize that there is

no alternative checking mechanism in place when U.S. Department of Agriculture inspectors fail to show up for want of funds.

I have made it a point to speak of the dealers because so great a proportion received no inspection whatever; however it is essential to recognize what a massive job inspectors for Regulatory Enforcement and Animal Care (REAC) are required to do. They have 9127 inspection sites throughout the United States! USDA states that they will average twice a year inspections, but these include the return visits the law requires them to make until all deficiencies are corrected - so only by stretching a point can an average of two inspections a year be reached, and the fewer inspections are made, the more rapid the decline in standards, as experienced veterinary inspectors routinely observe.

At the present time there is not a sufficient number of inspectors in REAC to do the job. Some states do not even have one single veterinarian and one technician to do the necessary inspections. Oftentimes travel time takes up more time than the inspection itself since the REAC staff is so small and may have to come from a long distance. When Veterinary Services conducted the inspections, the large staff was more evenly distributed over the country enabling inspectors to reach licensed or registered premises more readily. Now that the reorganization has taken place, it is essential that Congress appropriate more funds just to stay level with the workload.

The Society for Animal Protective Legislation did not ask for the reorganization, indeed we opposed it because we foresaw the difficulties in making it workable. However, for better or worse, we have it, and we cannot lose faith with the American public who are counting on the Congress to make the Animal Welfare Act work for the animals.

The support of a large number of scientific organizations, including the largest users of experimental animals, demonstrates the Act's value in maintaining the standards necessary for meaningful scientific results. Without the Animal Welfare Act's surveillance and requirement for minimal standards, American research would be the poorer.

I urge you for both pragmatic and moral reasons to appropriate $12 million for FY91 to enforce the Animal Welfare Act.

Horse Protection Act

Others will address in detail the need for funds to enforce this law. The Society for Animal Protective Legislation supports the budget request for $450 Thousand. Last year only $161 Thousand was appropriated, making it impossible, even with greatest economy, to administer the law.

TUESDAY, MARCH 27, 1990.

FOOD PROGRAMS OF FDA

WITNESS

EDWARD DUNKELBERGER, NATIONAL FOOD PROCESSORS ASSOCIATION

Mr. AKAKA. We now call on Edward Dunkelberger of the National Food Processors Association. We welcome you and look forward to your testimony. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation. Please proceed.

Mr. DUNKELBERGER. Thank you, Mr. Chairman. I will skip through it and try to shorten it considerably.

My name is Edward Dunkelberger. I am Counsel to the National Food Processors Association.

NFPA is a trade association representing approximately 600 member companies engaged in the food industry. On behalf of NFPA, I would like to thank you, Mr. Chairman and members of the subcommittee, for inviting the Association here today. We appreciate the opportunity to express publicly our strong support for the food programs of the FDA and for the funding we believe is fundamental to assuring the future strength and vitality of this important agency.

The food industry works strenuously to produce the most safe and wholesome food available in the world and to maintain the confidence of consumers in the high quality of the foods we supply. FDA also plays an essential and pivotal role in this regard.

A strong FDA promotes food quality and assures consumer confidence in the food supply through the science-based policy choices it makes as it assesses the need for food and labelling regulation, evaluations and develops regulatory systems to address food issues, and communicates health information and explains FDA policies to the public.

As a consumer-driven industry engaged daily in interstate commerce, the food industry knows first-hand that a strong FDA that enjoys public confidence is fundamental in promoting consistent regulatory standards that best promote public health uniformly throughout the nation. Therefore, it is of critical importance to the food industry and to the public that FDA be funded and staffed adequately to carry out its Congressional mandate and to restore the confidence of consumers in the agency. The effectiveness of the agency has suffered during the period of deregulation of the 1980s and must now be restored.

NFPA asks this subcommittee not only to fund fully the President's budget request for FDA, but to provide additional funds in several specific areas of research that will strengthen FDA's effectiveness.

The Association requests that the subcommittee add $10 million to the FDA budget to fund research that would identify ways in which FDA can improve its communication of health risk information to the public.

NFPA believes that improved risk communication is necessary so that the health messages FDA disseminates to the public are not

only accurate but understood. Too often information concerning diet-related risks have created public misconcepts and inappropriate reactions that have seriously damaged sectors of the food industry. To avoid such incidents in the future, research must be directed toward understanding better current public attitudes concerning health risks, creating a risk data base and food crisis center, and identifying enhanced methods of risk communication.

NFPA also requests that $10 million be provided to augment FDA research concerning biotechnology. Advances in biotechnology are stimulating the development of new foods and food ingredients. Sufficient funds must be appropriated to keep the agency abreast of these developments so that it is prepared to regulate products derived through biotechnology in a manner that best promotes the health and safety of the American consumer.

NFPA also requests that $5 million be added to the FDA budget to strengthen the agency's research capability in the areas of food packaging and processing technologies. Such research is essential if FDA is to be adequately prepared to address the regulatory issues presented by such new technologies as degradable food packaging materials and aseptic food processing and packaging methods.

Research should address scientific questions concerning package integrity, microbiological safety of packaging components and packaged foods, and the diffusion of packaging materials into food.

Finally, NFPA requests that $6 million be added to the FDA budget to fund research to execute a comprehensive review and evaluation of food labeling that can serve as a foundation for a new food labeling system.

Congress and the public have displayed great interest in the development of an improved regulatory system for labeling foods with food safety and nutrition information and with health messages related to diet and health. To achieve such a change from the current regulatory scheme, research is needed so that the Center for Food Safety and Applied Nutrition can review fully current food labeling regulations and develop new requirements and a system for increased labeling surveillance and enforcement.

NFPA asks for your support for the specific requests I have outlined today. Please support the FDA and provide funds sufficient to enable the agency to carry out the mission that Congress has mandated.

Thank you.

Mr. AKAKA. Thank you very much, Mr. Dunkelberger, for your testimony. It will be helpful to the committee. Thank you.

Mr. DUNKELBERGER. Thank you, sir.

[Mr. Dunkelbergers' prepared statement follows:]

Statement of the

National Food Processors Association

Before the

Rural Development, Agriculture, and

Related Agencies Subcommittee

of the

House Committee on Appropriations

FY 1991 Budget for the Food and Drug Administration

March 27, 1990

Good afternoon. My name is Edward Dunkelberger and I am counsel to The National Food Processors Association (NFPA). NFPA is a trade association representing approximately 600 member companies engaged in the food industry. NFPA members include manufacturers of process-prepared vegetable, fruit, meat, poultry and fish products as well as processors of speciality food items preserved through canning, freezing, dehydration, pickling and other methods. NFPA members also include companies that supply food companies with specialized equipment and other supplies.

NFPA is a scientifically and technically-based trade association. NFPA's commitment to science and technology is evidenced by the three food science research laboratories it operates which are staffed by over 100 employees. NFPA laboratories conduct studies on food safety, nutritional content of food and innovative food processing and packaging technologies designed to promote optimal safety and nutritional value of food. NFPA brings its technical expertise to its representation of member companies in matters of scientific, government and consumer affairs.

On behalf of NFPA, I would like to thank you, Mr. Chairman, and members of the Subcommittee for inviting me here today. We appreciate the opportunity to express publicly our strong support for the food programs of the Food and Drug Administration (FDA) and for the funding we believe is

fundamental to assuring the future strength and vitality of this important agency. We in the food industry work strenuously to produce the most safe and wholesome food available in the world, and to maintain the confidence of consumers in the high quality of the foods we supply. We work hard not to merely maintain the status quo, but to develop and utilize new food technologies so that consumers benefit from advances in food safety and nutrition as science equips us to provide them. The food industry also strives to communicate important food-related health and safety information to the public. We believe our record is strong, and one to be proud of.

FDA also plays an essential and pivotal role. A strong FDA promotes food quality and assures consumer confidence in the food supply through the science-based policy choices it makes as it assesses the need for food and labeling regulation, evaluates and develops regulatory systems to address food issues, and communicates health information and explains FDA policies to the public. When FDA is unable to effectively carry out these functions, public confidence in the agency wanes, yielding potentially serious consequences for the food industry: states may consider it necessary to develop their own regulatory schemes; private organizations may launch quasi-regulatory food testing or labeling systems; and consumers may believe it necessary to avoid certain food products to protect their own health. As a consumer driven industry engaged daily in interstate commerce, the food industry knows first-hand that a strong FDA that enjoys public confidence is fundamental in promoting consistent regulatory standards that best promote public health uniformly throughout the nation. Such consistent standards enable the food industry to remain competitive at home and throughout the world.

Therefore, it is of critical importance to the food industry that FDA be funded and staffed adequately to carry-out its Congressional mandate and to restore the confidence of consumers in the agency. The effectiveness of the agency has suffered during the period of deregulation of the 1980's and must now be restored. NFPA asks that the Rural Development, Agriculture, and Related Agencies Subcommittee not only to fund fully the President's budget request for FDA, but provide additional funds in several specific areas of research that will strengthen FDA effectiveness.

Risk Communication

NFPA requests that the Subcommittee add $10 million to the FDA budget to fund research that would identify ways in

which FDA can improve its communication of health risk information to the public. NFPA believes that improved risk communication is necessary so that the health messages FDA disseminates to the public are not only accurate, but understood. Too often, information concerning diet-related risks have created public misconceptions and inappropriate reactions that have seriously damaged sectors of the food industry. For an example, one only needs to recall the injury to apple growers and manufacturers of apple products that resulted last year from public misunderstanding of the risk presented by Alar.

To avoid such incidents in the future, research must be directed toward understanding better current public attitudes concerning health risks, creating a risk database and food crisis center, and identifying enhanced methods of risk communication. Such research is of foremost importance and will help to maintain public confidence in the food supply by fostering improved public understanding of the true nature of food risks, and by informing FDA of public food safety concerns so that it may better target its resources.

Biotechnology

NFPA requests that $10 million be provided to augment FDA research concerning biotechnology. Advances in biotechnology are stimulating the development of new foods and food ingredients. These include enzymes useful in food processing that are derived from genetically engineered bacteria, and food produced by genetically engineered plants. Sufficient funds must be appropriated to keep the agency abreast of these developments so that it is prepared to regulate products derived through biotechnology in a manner that best promotes the health and safety of the American consumer.

Food Packaging and Processing Technologies

NFPA requests that $5 million be added to the FDA budget to strengthen the agency's research capability in the areas of food packaging and processing technologies. Such research is essential if FDA is to be adequately prepared to address the regulatory issues presented by such new technologies as degradable food packaging materials and aseptic food processing and packaging methods. Research should address scientific questions concerning package integrity, microbiological safety of packaging components and packaged food, and the diffusion of packaging materials into food.

Food Labeling and Health Messages

NFPA requests that $6 million be added to the FDA budget to fund research to execute a comprehensive review and evaluation of food labeling that can serve as a foundation for a new food labeling system. Congress and the public have displayed great interest in the development of an improved regulatory system for labeling foods with food safety and nutrition information and with health messages related to diet and health. To achieve such a change from the current regulatory scheme, research is needed so that the Center for Food Safety and Applied Nutrition can review fully current food labeling regulations, and develop new requirements and a system for increased labeling surveillance and enforcement. Such research will enable FDA to satisfy the desire of Congress and the public for an improved labeling system. It will help to assure that the new system ultimately developed is appropriate and one FDA can effectively administer.

To summarize, it is most important that FDA regain the leadership and organizational strength that it has lost over the past eight years. The Congress, the public, and industry must be able to rely on a strong FDA to ensure the safety of the food supply. NFPA believes that by providing not only the funds that the President has requested, but additional funds in specific areas of research that are critical to FDA effectiveness, FDA will be better prepared to meet the regulatory challenges it continues to face as a result of advances in food technology, and consumer expectations. NFPA asks for your support for the specific requests I have outlined today. Please support the FDA and provide funds sufficient to enable the agency to carry out the mission Congress has mandated.

I am pleased to answer any questions the Subcommittee may have.

TUESDAY, MARCH 27, 1990.

USDA APPROPRIATIONS

WITNESS

TOM COOK, NATIONAL CATTLEMEN'S ASSOCIATION

Mr. AKAKA. We will now hear from the National Cattlemen's Association, Tom Cook.

We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

Mr. COOK. Thank you, Mr. Chairman. My name is Tom Cook and I am the Director. I have a summary of my remarks and I will try to summarize them a little bit in the interest of time.

Mr. AKAKA. We would really appreciate that.

Mr. COOK. We do appreciate the opportunity to be here today.

We are in general support of the Administration's proposed budget. We recognize the realities of the current situation and the need to limit Federal spending; however, we do believe that the Department of Agriculture has taken more than its share of budget cuts in recent years. Unfortunately, one reality is that some programs and policies are being driven solely by budgetary constraints. There are some programs where spending should be considered as an investment or a cost now for a longer-term savings.

A good example of investment for the future is the national research initiative in which NCA was an early supporter of this program. Agricultural research is very much in need of an infusion of funding. The Administration has proposed $100 million for this initiative in 1991, with subsequent increases in future years.

We would have preferred a higher start-up appropriation such as $150 million and would urge Congress to consider this level.

Equally important is our recommendation that this program be administered through competitive grants.

An example of a program with higher costs today but longer-term savings is the rapid completion plan for brucellosis eradication. The current program has enjoyed significant progress in recent years. There are now 29 free States and no Class C States. In many programs such as this the greatest efforts must be made to eliminate the last vestiges of the disease at the end of the program as you reach the end.

A year ago NCA, along with several other industry organizations, developed a rapid completion plan and it was discussed before this committee at hearings then. This plan, if implemented, is projected to have every State either free or in the process of qualifying to be free within five years. We urge the Department to fund the rapid completion plan. That appears not to have been done in the 1991 budget, and we would urge Congress to consider funding this plan as proposed in order to conclude this costly eradication program quicker, thereby saving Federal spending over the longer term.

We have no specific recommendations for the food safety inspection service budget; however, we do believe there must be enough money available to fund inspection programs throughout the entire year. In other words, we can ill afford furloughs or work stoppages

because of money shortages from meat inspection. Such shutdowns create economic and marketing havoc for the cattle industry.

I would also like to take a moment and state our concern over the prospects of a Federal fish inspection program. We believe that if there is to be a fish inspection program, it must be mandatory, it should be administered by the Department of Agriculture, and it should be funded with public moneys.

Our meat inspection system is the best in the world. Our consumers are the beneficiaries of a safe and wholesome product. Cattle producers benefit from the credibility of the program and the acceptance of our product. We expect a fish inspection program to be nothing less. The integrity of one food safety program affects the integrity of all other programs.

Mr. Chairman, our prepared statement has a number of other recommendations that I would like you and the staff to consider, but at this time, in the interest of time, I will conclude my remarks.

Thank you.

Mr. AKAKA. Thank you very much for your testimony. It will be helpful to the committee. Thank you.

Mr. COOK. Thank you.

[Mr. Cook's prepared statement follows:]

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Testimony on Behalf of the

NATIONAL CATTLEMEN'S ASSOCIATION

on the

1991 Budget
USDA and Related Agencies

before the

Rural Development, Agriculture, and Related Agencies Subcommittee
of Appropriations

UNITED STATES HOUSE OF REPRESENTATIVES

submitted by

Tom Cook, Director Industry Affairs

NATIONAL CATTLEMEN'S ASSOCIATION

Tuesday, March 27, 1990

The National Cattlemen's Association is the national spokesman for all segments of the beef cattle industry--including cattle breeders, producers and feeders. The NCA represents approximately 300,000 cattlemen. Membership includes individual members as well as 47 affiliated state cattle associations and 26 national breed associations.

The National Cattlemen's Association appreciates the opportunity to present its views on the Administration's 1991 budget for the U.S. Department of Agriculture and related agencies. We believe the budget proposed, in a general sense, is realistic and addresses many of our concerns.

We have long believed the federal deficit must be reduced. One way to do so is to cut federal spending. The USDA has taken its share of budget cuts for many years. While we recognize the reality and are willing to accept it, it is unfortunate that some programs and policies are being driven solely by budgetary constraints.

There are instances where program spending should be looked at as an investment to the future, or for longer term savings.

Following are some of our concerns and recommendations as they relate to specific agencies and programs:

Marketing and Inspection Services

Agricultural Marketing Service

Easy access to available price and volume information by producers is critical for maintaining a competitive, free-market system. NCA supports AMS efforts to increase reporting of contracted and formula priced cattle consistent with changing production and marketing procedures in the industry.

NCA encourages AMS to continue increased efforts to expand verified reporting of boxed beef sales and to begin reporting a price (or index) for Boxed Beef Carcass Units (BCUs). The AMS decision to discontinue reports of carcass beef trade on June 30, 1991 and AMS efforts to improve the boxed beef cutout series are applauded.

Animal Plant Health Inspection Service

The NCA is vitally interested in the programs of the APHIS. This agency is responsible primarily to protect the nation's livestock industry from dangerous diseases and pests, particularly the introduction of foreign animal diseases.

The brucellosis eradication program continues to make significant progress. We appreciate the fact that Congress restored previously cut funding in the 1990 budget. The requested level for 1991 of $64.6 million dollars recognizes the need to continue this program. However, this past year the NCA and other industry organizations endorsed a Rapid Completion Plan for Eradication of brucellosis. This plan would accelerate the program to a quicker conclusion whereby every state would either be free or in the process of qualifying to be free within five years. We urged the USDA to include funding for the Rapid Completion Plan in the 1991 budget. This was not done.

The NCA requests Congress to appropriate the funds necessary to establish the Rapid Completion Plan for brucellosis.This is a case where we believe additional funding now will mean substantial savings in the future

The NCA supports the increases in the Animal Damage Control program. At our recent annual meeting, our members adopted policy that urges the federal government to substantially increase funding for animal damage control research by appropriate natural, toxic and mechanical means. Our members also resolved that the percentage of the ADC field operation budget

in fiscal year 1987 be considered the minimal acceptable level of the field operation budget for subsequent years.

Food Safety and Inspection Service

The NCA has no specific recommendations to the budget proposal by the Administration for the FSIS. However, we do have some comments to make regarding FSIS programs.

The consumer is the ultimate beneficiary of our federal meat inspection program. No other product is inspected more than meat and poultry before it reaches the consumer. Our USDA/FSIS inspection program is the envy of the world. Cattle producers are proud of this program. It's effectiveness and acceptability is imperative to the favorable image of our product.

From a more practical standpoint, the program must be funded sufficiently to run throughout the year. Furloughs and shut downs for money shortage reasons of the meat inspection activities are unacceptable. Such work stoppages will create economic havoc throughout the entire system all the way back to the producer.

Fish inspection, or lack of it, is currently being debated in Congress. The NCA recognizes the importance of federally mandated food inspection programs. We believe that if there is to be a fish inspection program, it 1) must be administered by the USDA and 2) that it be funded with public monies and 3) it be mandatory.

Packers and Stockyards Administration

The beef industry is in the midst of significant structural change. Mergers and acquisitions within the beef packing industry have resulted in four firm concentration ratios over 65 percent. While it appears that these trends are the result of economic forces, concerns have been raised about the evolving structure of the industry and continued competitive pricing of beef products. Ongoing surveillance is necessary because of the increased potential for price manipulation or selective price reporting.

The NCA supports the Administration's proposal to increase P&SA funding to $10.7 million so that they may continue the responsibility for ensuring that livestock markets are free from unfair or deceptive practices. NCA encourages redistribution of P&SA budget priorities to increase auditing of auction market custodial accounts on an unannounced basis.

Economics

Economic Research Service

The beef cattle industry has become increasingly aware that a multitude of government policies and programs affect its structure and profitability. Government grain programs, foreign trade policy, and tax policies in addition to federal monetary and fiscal policies are not directly targeted at the livestock industry but have major implications for the economic well-being of livestock producers. Other issues including food safety, environmental concerns, concentration of the packing industry, impacts of biotechnology, alternative marketing systems, and risk management are of vital economic concern to the beef cattle industry.

Current, relevant and unbiased research is critical to entrepreneurial producers' financial survival in the evolving economic environment. The NCA supports the proposed funding level for the Economic Research Service, with the provision that the ERS actively seek and adhere to input and advice from the beef cattle industry defining relevant research topics. NCA supports

continued funding for publication of its cow/calf production cost series. ERS is encouraged to evaluate cost of production series, to modify services consistent with current production practices and to publish services on a more timely basis. NCA supports an ERS budget increase of $2.1 million to expand water quality, related data collection and related economical policy analysis.

National Agricultural Statistics Service

The beef cattle industry is the largest sector of U.S. agriculture. In the absence of government income assistance programs, beef cattle producers bear the full impact of decisions based on faulty or ill-timed reports. Accuracy and timeliness of NASS livestock and crop reports are crucial to cattlemen making major business decisions.

To address the above concerns, NCA requests that NASS:

1) maintain existing data series
2) consider adding or amending data series to reflect changes within the industry
3) strive to improve the accuracy and timeliness of all reports.

NCA supports continued public funding for these reports at proposed levels and requests continuous input into its cow/calf cost-of-production survey to be considered in 1991.

Science and Education

Agricultural Research Service

NCA supports the proposed budget increases for ARS research activities of $48.0 million. ARS has clearly established itself as a problem-solving research agency. The agency has been very responsive to the research needs of agriculture, including the beef cattle industry.

The nation's cattlemen recognize and appreciate the proposed $5.3 million increase in the Animal Science budget. however, they also recognize the continuing inequity in the ARS budget between plant science and animal science research as reflected in the $13.2 million increase in plant science. Farm income from the sale of animals is approximately equal to income from the sale of plant products. Yet plant research receives more than double the amount of support from ARS. We urge Congress to correct this problem so that animal science research reflects the importance of animal agriculture to the economy of the United State. However, NCA wishes to acknowledge and applaud a recent statement make by the ARE Administration to place more emphasis and priority on the research of plants that will directly enhance animal production.

Cattlemen are deeply concerned that American and foreign consumers have confidence in the safety and wholesomeness of beef. We have every reason to be proud of beef's safety record, but we believe there is room for progress in this area as with all foods. We therefore strongly support the $10.8 million increase to enhance research regarding bacterial contamination, and the drug and pesticide residuals of meat and dairy products.

Cattlemen too, are aware that farming and ranching practices are under increased scrutiny as potential sources of environmental degradation. NCA supports the $16.6 million increase in the soil and water conservation and other global change projects that will provide advanced scientific technical assistance and educational programs to producers. NCA ask that these projects develop base-line data on water quality, wet-land conservation, air quality, soil and wind erosion as affected by animal production units,

particularly beef production. NCA also ask that these projects determine what effect animal production (particularly beef) has had and will have on different land areas.

Cooperative State Research Service

NCA fully supports the National Research Initiative and proporents efforts to seek first-year funding levels of $150 million. NCA appreciates the administration's proposed $100 million budget for the Initiative and finds the $50 million annual increments increases encouraging. NCA also supports CSRS efforts to administer the Research Initiative funds through the competitive grant system. This is truly a case where this is an investment for the future.

NCA has noted the Administration's recommendations to discontinue special grant funding for Animal Health and Disease. Cattlemen believe this would be a grave mistake for producers and consumers alike. Suggestions to fund Animal Health and Disease through the Animal Science Competitive Grants program would also be a mistake. If this occurs, the remaining disciplines of Animal Science research would not grow any stronger than they have under previous budgetary restraints. In light of these concerns, NCA encourages Congress to support the Animal Science Competitive Grants Program as proposed in the National Research Initiative and restore Animal Health and Disease Special Grants and 1433 funds.

Extension Service

NCA supports the ES efforts to become a more "issue oriented" agency providing opportunities of information sharing and technology transfer for producers and consumers alike. However, NCA believes the ES coordination, planning and support of urban and rural education and technology transfer programs should relate to "agricultural issues." Therefore, in response to the proposed budget NCA supports the ES in expanding their role in producer consumer water quality and food safety education.

Before supporting the Youth at Risk program NCA would encourage Congress to seek answers to the following questions:

- Doesn't the Department of Health and Human Services (HHS) have responsibilities and subsequent budget appropriations for counseling on drug abuse, teenage pregnancy, depression and suicide as outlined in the proposed ES Youth-At-Risk Program?

- Has the ES attempted to coordinate the proposed Youth-At-Risk program with that of HSS to safeguard against duplicative effort?

- Given the fact that the federal budget for social programs continue to increase while many line-item budgets for agriculture decrease, aren't the social agencies in a stronger financial position to administer this type of Youth-At-Risk Program?

In the future NCA will fully support all ES programs designed to address consumer concerns regarding food safety, environmental stability, animal care and acceptance of biotechnology. Specifically, NCA recognizes Integrated Resources Management (IRM) as an interdisciplinary systems management programs that will enhance producer education and technology transfer. IRM will benefit producers, consumers, and the professional societies of agriculture by improving production efficiency, competitiveness, soil and water conservation animal care systems and food safety assurance programs.

Trade

The NIA supports activities and programs that enhance the export of US agricultural products.

We support the Targeted Export Assistance Program. It has been very beneficial to our industry, particularly with increased sales to Japan.

We support the Export Enhancement Program for trade policy purposes. EEP should be used to counter the unfair trade practices of other countries. To date, no EEP monies have been used for beef, beef products or beef cattle. However, if and when it is appropriate to use EEP monies with our product, we would support such action.

The NIA is opposed to the use of export subsidies. However, there are times such action must be necessary and the EEP is designed for that purpose.

TUESDAY, MARCH 27, 1990.

HAWAIIAN FRUIT FLIES

WITNESSES

JON OKADARA, HAWAII FRUIT FLY COMMITTEE
GARY DOI, GOVERNOR'S AGRICULTURAL COORDINATING COMMITTEE

Mr. AKAKA. Now we will hear from Jon Okadara of the Hawaiian Fruit Fly Committee.

Welcome, Jon.

Mr. OKADARA. Thank you.

Mr. AKAKA. We look forward to your testimony. We accept your written testimony and will place it in its entirety in the record immediately following your oral presentation.

Mr. OKADARA. Thank you.

Mr. Chairman and members of the committee, my name is Jon Okadara. I am Executive Director of the Hawaii Fruit Fly Committee and am presenting this testimony for Dennis Teranishi, who could not be here.

With me is Gary Doi, who is from the Governor's Agricultural Coordinating Committee.

The Hawaii Fruit Fly Committee was established by Governor John Waihee to develop an environmentally safe strategic plan for the eradication of four pestiferous fruit flies from the State of Hawaii.

Fruit flies are a major constraint to expanding diversified agriculture in Hawaii. Because of fruit flies, only 7 percent of Hawaii's total crop lands are planted in fruits and vegetables. The presence of fruit flies has resulted in restrictions imposed by Federal, State, and foreign government on the shipment of fruits and vegetables from areas such as Hawaii.

Furthermore, suitable post-harvest treatment for agricultural commodities where they exist add to the processing costs of those commodities and generally reduce the quality of those products.

The eradication of fruit flies from Hawaii is particularly important for the State of Hawaii, but it is also important from a national and international perspective.

Fruit flies in Hawaii represent a threat to the agricultural economies of California and other Southern States. The eradication of fruit flies from Hawaii will remove a potential source of infestation. In addition, technology developed for regional eradication, like the State-wide eradication of fruit flies from Hawaii, could be used in other regions with fruit fly infestations.

We strongly support the Agricultural Research Service's efforts to accelerate the pilot test by expanding research efforts to include oriental, melon, and Malaysian fruit flies. If these pilot tests are expanded to all four species, the tests could be completed in 8 years rather than 13.

The cost of the various components for fiscal year 1991 totals $3.7 million. These tests will contribute technical and scientific data that will be used to answer the complex questions that need to be answered in designing our eradication strategy.

The Hawaii Legislature has shown its commitment to the eradication of fruit flies in Hawaii by increasing its funding of various fruit fly control and eradication programs from $67,000 in 1987 to $441,126 in 1989. As a result, various fruit fly programs have begun or intensified in activity.

We commend the efforts of the Agricultural Research Service in developing an eradication strategy. We strongly support the funding of necessary research to make eradication possible.

We would like to invite the members of this subcommittee to come to Hawaii to view the various projects or to attend the conference that the committee is sponsoring in December for the eradication of fruit flies from Hawaii.

We thank you for this opportunity to present this testimony and would appreciate your support.

Thank you.

Mr. AKAKA. We thank you very much, Jon and Gary, for your testimony. I want to tell you that we are elated at the progress of the facilities. We look forward to the program, and we look forward to the rapid eradication of the fruit fly through the sterilization method that you are using.

I am glad to note that the program has been reduced from 13 to 8 years. That is good news because we need to do this as quickly as we can in Hawaii.

You also pointed out—which shows the commitment of the Hawaii Legislature—the $67,000 they appropriated in 1987 is now almost up to $500,000 in 1989.

With this, plus the commitment we have here, I look forward to the rapid eradication of the four fruit flies that are now infesting Hawaii.

I thank you very much for your testimony. This will be helpful to the committee.

Mr. OKADARA. Thank you.

Mr. AKAKA. Thank you.

[The prepared statement follows:]

TESTIMONY
before
The Agriculture, Rural Development and Related Agencies
Subcommittee on Appropriations
March 27, 1990

Concerning Pilot Tests for Trifly Eradication on Kauai and Niihau; and, the Malaysian Fruit Fly on Oahu

Written Statement by Dennis Teranishi, Vice President
Amfac-JMB Hawaii, Inc.
Honolulu, Hawaii

The Hawaii Fruit Fly Committee was established by Governor John Waihee to develop an environmentally safe strategic plan for the eradication of the four pestiferous fruit flies from the State of Hawaii. The four are the Mediterranean, the oriental, the melon (all three are referred to as "trifly") and the Malaysian fruit flies. The members of the Committee broadly represent the private sector, state and county governments, and the federal governments, including the Hawaii Farm Bureau, agribusiness members, scientists from the University of Hawaii, the Agricultural Research Service (USDA), Animal Plant Health Inspection Service (USDA), and the California Department of Food and Agriculture.

Fruit flies are a major constraint to expanding diversified agriculture in Hawaii. Only 7 per cent of Hawaii's total crop lands are planted in fruits and vegetables. Infestation by fruit flies cause direct losses in many different crops and make it economically infeasible to commercially grow many kinds of tropical and subtropical fruits in Hawaii. Further, the presence of fruit flies in Hawaii result in restrictions imposed by federal, state, and foreign governments on the shipment and sale of fruits and vegetables from areas infested by fruit flies.

If suitable postharvest treatments are available to meet quarantine standards, the restrictions on certain agricultural commodities may be lifted. These treatments, however, add to the processing costs of the commodities and generally reduce the quality of the product. The research to develop acceptable postharvest treatments often require from 6 months to 5 years to develop for each commodity. With the large number of fruits and vegetables that are hosts for pestiferous fruit flies, the time required for the development of suitable postharvest treatments for each commodity will be prohibitive.

The eradication of fruit flies from the State of Hawaii is particularly important from the both a national and

international perspective. Fruit flies in Hawaii represent a threat to the agricultural economies of California and other southern states. California is now experiencing, as it has in the past, an incipient infestation of fruit flies. Although the source of these infestations has not been determined, the eradication of fruit flies from Hawaii will remove a potential source of infestations. The technology developed for a regional eradication like the statewide eradication of fruit flies from Hawaii will be of major benefit to other countries with fruit fly infestations. Eradication of fruit flies from these countries will further eliminate sources of fruit flies that can be accidentally introduced to the United States.

In the last year and a half, various fruit fly programs have begun or moved to higher levels of activity.

Species Survey. A fruit fly species survey is underway to determine the number of species of fruit flies that occur in Hawaii. The survey was initiated because, in recent years, several species of fruit flies were detected in California that are not known to occur in Hawaii. This survey is to ascertain whether or not those species or any other unknown species occur in Hawaii.

Pilot Test to Eliminate the Mediterranean Fruit Fly from Kauai and Niihau. Since mid-July of 1989, ground releases of sterile flies have been made on the island of Kauai. The ground releases were started to suppress the explosion in the population of medflies caused by the large amount of coffee coming into production in the area. Since October, the number of releases have been increased and the releases are now being made by aircraft.

Public Education Program. The success of a statewide eradication strategy will depend heavily on public understanding and support of the eradication effort. A public education program is being implemented which will produce educational materials such as video tapes, informational publications, and instructional kits that can be incorporated into the public school curriculum. A further goal of the program is promote greater public understanding that any statewide eradication program will be conducted in a manner that is sensitive to environmental concerns.

Chemical Registration. Section 3 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires the registration of all pesticides for their intended use.

Various chemical combinations of male lures with

toxicants, and protein hydrolysate baits with toxicants are essential for a statewide fruit fly eradication strategy. A sub-committee of the Hawaii Fruit Fly Committee is working to identify the tasks that have to be performed to meet the Environmental Protection Agency's requirements and achieve the registration of the required chemical combinations.

After considerable consultation with the Agricultural Research Service, I concur with the option to accelerate the eradication pilot tests. A careful analysis by ARS suggests that if the pilot tests were to occur on all four species of pestiferous fruit flies, the test could be completed in eight years rather than 13 years, with no appreciable increase in total cost. Accordingly, we strongly support ARS's efforts to accelerate the pilot tests by expanding research efforts to the oriental, melon, and Malaysian fruit flies.

The cost of the various components of this program in Fiscal Year 1991 is $3.7 million. The specific costs of the components are:

Medfly Pilot Tests	$1.7 million
Environmental and Parasite Studies for Oriental and Melon Flies	$1.1 million
Malaysian Fruit Fly Pilot Test	$0.9 million

The implementation of an environmentally safe statewide fruit fly eradication strategy requires answers to many complex questions. The pilot tests underway on Kauai and elsewhere in Hawaii will all contribute technical and scientific data that will be used to answer those questions and design an eradication strategy.

The Hawaii State Legislature has shown its commitment to the eradication of fruit flies from Hawaii by increasing its funding of various fruit fly control and eradication programs from $67,000 in 1987, to $441,126 in 1989.

These programs will have major implications in the designing of a statewide fruit fly eradication strategy and, consequently, on Hawaii and national agriculture. We commend the efforts of the Agricultural Research Service in the development of a strategy. We are excited about the possibilities for fruit fly eradication and strongly endorse the supporting of the necessary research to make eradication possible.

Thank you for this opportunity to testify.

TUESDAY, MARCH 27, 1990.

CENTER FOR TROPICAL AND SUBTROPICAL AGRICULTURE

WITNESS

DR. CHAUNCEY T.K. CHING, CENTER FOR TROPICAL AND SUBTROPICAL AGRICULTURE

Mr. AKAKA. We will now hear from Doctor Chauncey Ching, Center for Tropical and Subtropical Agriculture.

Dr. CHING. Thank you, Mr. Chairman. My name is Chauncey Ching. I am the Director of the Hawaii Institute of Tropical Agriculture and Human Resources. My testimony is presented in support of the Center for Tropical and Subtropical Agriculture. I thank you very much for allowing me to present this material to you.

I acknowledge the members of this committee for their insight and understanding in appropriating moneys during the previous session of Congress to plan and design the Center for Tropical and Subtropical Agriculture. Clearly, the committee understands the increasing importance of diversified agriculture in our nation's economy and the increasingly important role the Pacific plays in world trade and affairs.

Expanding diversified agriculture and international trade, the latter through an international trade development center, are two major objectives of the Center for Tropical and Subtropical Agriculture.

As a nation, I believe we have an unprecedented need to be competitive in world markets. Although this is true in general, I think it is especially true in agriculture. The days we dominated world agricultural trade in terms of exports and had only token amounts of agricultural imports are over.

In my written testimony I present data to show exports of agricultural, fish, and forestry products slowly declining. In contrast, imports are increasing rapidly.

In 1988, for example, exports exceeded imports by only about $5 billion, as opposed to nearly $24 billion in 1981.

There is clearly a need to diversify our agriculture to competitively produce substitutes for imports and to broaden our trading base so that we can expand our global market share of agriculturally-based products.

For many years Europe and Asia have been the two primary markets for U.S. agricultural products. A new trend has occurred in these two markets. U.S. agricultural exports to Europe—at least in the early 1980s—declined sharply, at least in terms of trade share; while the share of U.S. exports to Asia increased sharply. There is clearly a new center of gravity in the world economy.

For this reason, we propose the establishment of an international trade development center as one component of the Center for Tropical and Subtropical Agriculture. We view the international trade development center as a programmatic center which will broker information regarding agricultural trade, especially as it pertains to Pacific and Asia.

Hawaii's geographic location provides an ideal location for such a center. It would also provide a locus for training trade delegations, relying on the experience of the University of Hawaii in terms of language, culture, and general interaction with Pacific and Asian trade partners.

The center has received strong support from the administration of the University of Hawaii, the Office of the Governor, and the Hawaii State Legislature. The University administration has included the construction moneys for the center in their budget submission to the Governor. The Governor has released the State's portion of the moneys needed to plan and design the facility. Both Houses of the 1990 Hawaii State Legislature have made provisions for construction moneys for the center in their budget proposals.

The USDA Cooperative State Research Service has worked closely with the University in initiating the planning and design phase of the center. To date, the architects have been retained and they have worked with the facilities planning staff of the University and the faculty of the college to generate the detailed plans for the structure. The architect's time table calls for completion of design by the spring of 1991.

Based on the above, I ask for funds to support the construction of the Center for Tropical and Subtropical Agriculture. The total cost of this facility, including equipment, is about $23 million. For the programmatic international trade development center we request first-year funding of $452,000 to implement detailed plans.

Mr. Chairman, thank you very much for allowing me to offer these comments to you this afternoon.

Mr. AKAKA. Thank you very much, Doctor Ching, for your statement. Thank you for your remarks.

I am glad to see that with your leadership you are moving along with the center, which is supported by the University administration, the Governor, and the State Legislature. I also note the vision you have for its use in providing service not only in Hawaii, but for the Pacific area. This is certainly looking forward to the kind of service the United States can provide our territories, as well as some sister nations in the Pacific.

Thank you very much for your testimony.

Dr. CHING. Thank you.

Mr. AKAKA. I have received a letter from Hawaii State Representative Honda in support of the fruit fly program. With his letter, he enclosed a letter to Chairman Whitten on this issue. I ask that it be printed in the record following the statement of Dr. Ching. Thank you very much Dr. Ching. The committee stands adjourned.

[Dr. Ching's prepared statement follows:]

TESTIMONY
before
The Agriculture, Rural Development and Related Agencies
Subcommittee on Appropriations
March 27, 1990

Concerning the Center for Tropical and Subtropical Agriculture

Written Statement by Chauncey T.K. Ching, Director
Hawaii Institute of Tropical Agriculture and Human Resources
College of Tropical Agriculture and Human Resources
University of Hawaii
Honolulu, Hawaii

Mr. Chairman, and members of the subcommittee, my name is Chauncey T.K. Ching. I am director of the Hawaii Institute of Tropical Agriculture and Human Resources, University of Hawaii. My testimony is presented in support of the Center for Tropical and Subtropical Agriculture. I thank you for the opportunity to appear before you.

I acknowledge the members of this committee for their insight and understanding in appropriating monies during the previous session of Congress to plan and design the Center for Tropical and Subtropical Agriculture. Clearly, the committee understands the increasing importance of diversified agriculture in our nation's economy. Diversification has major implications for U.S. competitiveness in world agricultural-product markets and, consequently, for U.S. trade balances. I further commend the committee for their comprehension of the increasingly important role the Pacific plays in world trade and affairs.

COMPETITIVE IN WORLD MARKETS

I sincerely believe that we as a nation have an unprecedented need to be competitive in world markets. The days we dominated world agricultural trade in terms of exports and had only token amounts of agricultural imports are over. To illustrate, I call your attention to U.S. exports and imports of agricultural, fish, and forestry products since 1981:

	Exports	Imports	Net
1981	52.7	29.1	23.6
1984	45.9	34.6	11.3
1988	46.9	42.0	4.9

(figures are in billions of dollars)

The trends are clear. Exports are slowly declining. Imports are increasing rapidly. In 1988, exports exceeded imports by only about $5 billion as opposed to nearly $24 billion in 1981.

There is clearly a need to diversify our agriculture to competitively produce substitutes for imports and to broaden our trading base so that we can expand our global market share of agriculturally based products. Expanding diversified agriculture and international trade (through an international trade development center) are two major objectives of the Center for Tropical and Subtropical Agriculture.

IMPORTANCE OF THE PACIFIC

The committee's knowledge on the increasing significance of the Pacific region is commendable. For many years, Europe and Asia have been the two primary markets for U. S. agricultural products. A new trend has occurred in these two markets--U. S. agricultural exports to Europe, in the early 1980's, declined sharply in importance (i.e., trade share) while the share of U.S. exports to Asia increased. There is a new center of gravity in the world economy.

International trade and development activities are clearly essential constituents of a Center whose mission is the diversification of agriculture to reduce U. S. trade deficits. For this reason, we propose the establishment of an International Trade Development Center as one component of the Center for Tropical and Subtropical Agriculture. We view the International Trade Development Center as a programmatic center which will broker information regarding agricultural trade--especially as it pertains to the Pacific and Asia. Hawaii's geographic location provides an ideal location for such a programmatic center. The trade center will be a focal point for trade information as well as trade delegation training. The University of Hawaii has a major advantage in carrying out these functions because of its expertise and experience in the languages, culture, and general interactions with Pacific and Asian trade partners.

SUPPORT FOR THE CENTER

The Center has received strong support from the administration of the University of Hawaii, the office of the Governor, and the Hawaii State Legislature. The University Administration has included the construction monies for the Center in their budget submission to the Governor. The Governor has released the state's portion of the monies needed to plan and design the facility. Both Houses of the 1990 Hawaii State Legislature have made

provision for construction monies for the Center's facility in their budget proposals.

The USDA Cooperative State Research Service has worked closely with the University in initiating the planning and design phase of the Center. To date, the architects have been retained and they have worked with the facilities planning staff of the University and the faculty and staff to generate the detail plans for the structure. The architect's timetable calls for completion of design by the spring of 1991.

SUPPORT REQUESTED

Based on the above, I ask for funds to support the construction of the Center for Tropical and Subtropical Agriculture. The total cost of this facility, including equipment, is $23 million. For the programmatic international trade development center, we request first-year funding of $452,000. This level of support will enable the implementation of the detailed plans for the trade center.

Thank you for allowing me to offer these comments today.

Speaker
DANIEL J. KIHANO
Vice Speaker
EMILIO S. ALCON
Majority Leader
TOM OKAMURA
Majority Floor Leader
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50th — EZRA R. KANOHO
51st — BERTHA C. KAWAKAMI

†Minority Leader
††Minority Floor Leader

HOUSE OF REPRESENTATIVES
THE FIFTEENTH LEGISLATURE

STATE OF HAWAII
STATE CAPITOL
HONOLULU, HAWAII 96813

March 21, 1990

The Honorable Jamie L. Whitten
Chair, Subcommittee on Rural Development,
Agriculture & Related Agencies
2362 Rayburn House Office Building
Washington, D. C. 20515-6016

Dear Chairman Whitten:

I would like to offer my support, as the chair of the Hawaii House Committee on Agriculture, for the funding of fruit fly research projects in Hawaii. Pestiferous fruit flies are a major constraint to the development of Hawaii's diversified agriculture industry. They also have an adverse effect on crops, such as papaya, by requiring postharvest treatment which adds to the cost of production.

The research projects and pilot tests will provide data that can be used to formulate a strategy for the statewide eradication of fruit flies. I would appreciate your favorable consideration of the funding of these fruit fly research projects and pilot tests.

The schedule of the 1990 legislative session does not permit me to convey my support in person. Again, I humbly request your favorable consideration of this program.

Thank you for this opportunity to submit these comments.

Sincerely,

Herbert J. Honda
State Representative
Eighth District

HJH:mk

WEDNESDAY, MARCH 28, 1990.

NORTHERN PLAINS BIOSTRESS LAB

WITNESSES

HON. TIM JOHNSON, A U.S. REPRESENTATIVE FROM THE STATE OF SOUTH DAKOTA

DAVID A. BRYANT, SOUTH DAKOTA STATE UNIVERSITY

Mr. WHITTEN. The committee will come to order.

At this time we call on Congressman Tim Johnson.

Mr. Johnson, we are mighty glad to have you. We will put your entire statement in the record following your oral remarks, and you may touch on the high points if you would like.

Mr. JOHNSON. Thank you, Mr. Chairman and members of the committee.

To my right is Dean David Bryant of South Dakota State University. He is the dean of the College of Agriculture.

I will submit my statement for the record and summarize somewhat more briefly. Mr. Bryant would have more detailed information about the issue before us.

I appreciate the opportunity to come before you to express my strong support for continued funding of the Northern Plains Biostress Lab at South Dakota State University. The Biostress Lab will help to facilitate ongoing research on environmental and biological stresses placed upon both plants and animals, as well as human beings.

I want to commend Doctor Bryant for his leadership, as well as lay leaders across the State, in promoting this project.

South Dakota and the University have a long tradition of research in areas related to coping with diverse conditions. Mr. Chairman, I would like to continue to build on this history, and I believe that the Biostress Lab will enhance research efforts carried on at the national level, which is being carried out at other land grant institutions as well as various USDA agencies.

The committee approved funding for fiscal year 1989 for the completion of a feasibility study and initial planning. The Cooperative State Research Service has its feasibility study, and the response has been tremendously positive.

As I indicated, the outpouring of support in South Dakota has also been overwhelming. The South Dakota State Legislature approved the issuance of $6.3 million in bonds to cover one-half the cost of the lab. The vast majority of agricultural groups in South Dakota have come out with public expressions of support for the facility.

Mr. Chairman and members of the committee, I am well aware of the funding difficulties facing you again this year; however, I believe that we must continue to pursue research to sustain the way

of life that those of us from rural America cherish. Our land grant institutions have always played an integral role in the lives of farm and ranch families, and I firmly believe that the Biostress Lab will be taking a leading role in ensuring the viability of our agriculture producers.

Again, I want to thank the committee for providing $1.7 million last year for phase I, and I would ask that the subcommittee consider the provision of funding in fiscal year 1991 of $4.5 million for construction money that would match the $6.3 million that has been appropriated by the State. That would allow us to move forward with this vitally needed project.

The potential of and support for the lab is evidenced by the State of South Dakota's willingness to come up with half the cost of the building, and I think the project points to an outstanding feature.

I thank you again for your ongoing support that we have found in this committee.

Mr. Chairman, unless there are any other questions, Mr. Bryant has some information, as well.

Mr. WHITTEN. Thank you very much. We appreciate your appearance and your statement. We all have this problem, ourselves. We do the best we can.

Do you have a statement, Doctor Bryant?

Mr. BRYANT. Yes, Mr. Chairman.

The Biostress Lab does represent what we feel to be a regional and national proposal to stabilize agricultural production. We feel that, as currently designed, the lab will benefit the Plains region, as well as much of the nation, by improving economic stability through the development of a stabilized and profitable agriculture.

The potential benefits to rural revitalization, economic development, and water quality are also highly significant.

Quite simply, the laboratory builds on what we are best at in South Dakota and the Northern Plains, which is living with the elements—surviving with them; learning to deal with them; and producing, in spite of all of the various environmental and biological stresses that we contend with.

The laboratory will be the focus of expanded research to increase our understanding of the impacts of drought, heat, cold, insects, disease, and floods—all of these various stresses—on our livestock and crop production.

As Congressman Johnson indicated, human stress is also included in the concept. It boils down to helping the American farmer better cope with the stress factors that impact his or her livelihood and feeling that this is the real key to improving the quality of life for all Americans.

As far as specifics, the laboratory complex will provide, among other areas: climate control facilities, specialized labs for molecular genetics and plant breeding work, research on stress tolerance on plants and animals, research on reducing stress risks for crop and livestock production, and then the human stress research—for example, the impact of the environment in the northern plain on human aging.

The bottom-line focus, again, is on the development of stable production systems for agriculture and building on our current and past research record in this area.

The USDA Cooperative State Research Service's feasibility study of this project was very enthusiastic in its endorsement and its recommendation that the scope be expanded to a national focus. We have attempted to do that during the last year.

We are very proud of the 50/50 State/Federal partnership as far as funding and feel that this is a true indication of the level of support from South Dakota and the region for this project. As we look at the effects of the 1988/1989 drought that are still with us and the stresses related to that drought that are found in crops and livestock and people, we feel that this points the way to the real urgency for bringing this laboratory on line and in operation.

We sincerely thank you for your consideration and support.

Mr. WHITTEN. Thank you very much. As I said, we try to do the best we can. I don't know just what we will be able to do. Thank you for your appearance.

Mr. JOHNSON. Thank you, Mr. Chairman.

Mr. WHITTEN. Mrs. Smith?

Mrs. SMITH. Thank you very much. We are glad to have you here.

[The prepared statements follow:]

TESTIMONY BY CONGRESSMAN TIM JOHNSON ON THE NORTHERN PLAINS BIOSTRESS LABORATORY AT SOUTH DAKOTA STATE UNIVERSITY

BEFORE THE SUBCOMMITTEE ON AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES

March 28, 1990

Mr. Chairman and other members of the Subcommittee, I appreciate the opportunity to come before you to express my strong support for continued funding of the Northern Plains Biostress Lab at South Dakota State University. The stress lab will help to facilitate ongoing research on the environmental and biological stresses placed upon both plants and animals as well as human beings.

There is a need for continuing research to help family-sized farmers and ranchers make a decent living. We can enhance the future of these producers by making technology available to them in forms that they can utilize on their operations. This is true of breakthroughs in genetic engineering as well as improvements in the efficiency of plant uptake of soil nutrients and water. South Dakota is an excellent location for this undertaking due to the diverse nature of its climate and terrain as evidenced by the variety of agricultural commodities raised.

I also want to commend Dr. David Bryant for his leadership in bringing the concept of the Biostress Lab to reality. The commitment shown by Dr. Bryant, his staff and the lay leaders involved with Extension programs in South Dakota has been tremendous, and there isn't any corner of the state where I go that I'm not asked about its progress and the excitement for the type of work that will be done there.

South Dakota and the university have a long tradition of research in areas related to coping with diverse conditions. Mr. Chairman, I would like to continue to build on this history and believe that the stress lab would enhance research efforts on the national level which is being carried out at other land grant institutions as well as various USDA agencies. The Committee approved funding in fiscal year 1989 for the completion of a feasibility study and initial

planning. The Cooperative State Research Service (CSRS) has its feasibility study, and the response has been tremendously positive.

As I have indicated, the outpouring of support in South Dakota has also been overwhelming. The South Dakota legislature approved the issuance of $6.3 million in bonds to cover half of the cost of the lab. The vast majority of agricultural-related groups in South Dakota have come out with public expressions of support for the facility.

Mr. Chairman, I am well aware of the funding difficulties facing you again this year. However, I believe that we must continue to pursue research to sustain the way of life that those of us from rural America cherish. Our land grant institutions have always played an integral role in the lives of farm and ranch families, and I firmly believe that the stress lab will be taking a leading role in ensuring the viability of our agricultural producers.

Again, I want to thank the Committee for providing $1.7 million last year, and I would ask that the subcommittee provide continued funding in the FY91 appropriations bill of $4.5 million for construction money to complete the $6.3 million that has been appropriated by the state. The potential of and support for the lab as evidenced by the state of South Dakota's willingness to come up with half of the cost of the project points to an outstanding future.

NORTHERN PLAINS BIOSTRESS LABORATORY
Prepared Statement
Rural Development, Agriculture, and Related Subcommittee on Appropriations
House of Representatives
March 28, 1990

The Northern Plains Biostress Laboratory represents a regional and national proposal to stabilize agricultural production. It will be constructed on the campus of South Dakota State University at Brookings as part of the College of Agriculture and Biological Sciences. The facility will be the nucleus of expanded research to increase our understanding of the effects of biological and environmental stresses upon animals, plants and people. The 150,000 square foot building complex will also include teaching laboratories, classrooms and offices. The laboratory will serve as a focal point for stress-related research in the region and nation.

The Northern Great Plains is one of the most important agricultural regions of the world. South Dakota itself ranks in the top 10 states in the U.S. in the production of major commodities. Yet the environment that plays a significant role in attaining this rank is also the primary restraint to stabilizing and/or increasing agricultural production.

Records verify the weather extremes in the region. Drought can be expected somewhere in the Northern Plains every year. Air temperatures may exceed 100 degrees F in the summer and winter air temperatures may dip to -40 degrees F with wind chills exceeding -100 degrees F. All seasons show extreme variability over years and across the region east to west and north to south.

Pests are abundant, and include grasshoppers, mosquitoes, flies and ticks. Plant pathogens frequently cause large reductions in crop yields.

The laboratory will benefit the entire region, as well as much of the nation, by improving economic stability through the development of stabilized and profitable agriculture. The potential benefits to rural revitalization and water quality are also highly significant.

The region already has outstanding scientists, agricultural research field stations and an excellent history of conducting stress-related research. It is estimated, for example, that Hessian Fly damage to spring wheat in South Dakota caused losses in excess of 30 million dollars in one growing season. New cultivars with resistance to Hessian Fly from SDSU research are now available.

A unique feature of the Northern Plains is its wetlands. Recent national legislation designed to preserve wetlands will require improved agricultural practices near these areas. The impact of agricultural chemicals, erosion, salinity and grazing present challenging research topics for plant-stress studies and for wetland protection.

The Northern Plains Biostress Laboratory concept has been developed to position South Dakota State University as a leading institution in stress-related research. The laboratory will use an integrated research

approach. Research in the facility will be conducted by scientists from several departments and disciplines using shared facilities. The Northern Plains Biostress Laboratory is as much a program as it is a facility. As a program it expands beyond the laboratory itself and beyond the departments that will be housed in it. Besides faculty in Agriculture and the Biological Sciences, the program involves staff in colleges of Arts & Science, Home Economics, Nursing, Engineering, and Education.

The proposed Stress Laboratory complex will provide climate-control facilities (growth chambers, stress laboratories), specialized laboratories for cell culture, inoculation research laboratories and rhizosphere study areas. Research on chemical interactions between plants, root-microbe interactions, stress tolerance, human stress, reducing stress risks and development of stable production systems will have a positive influence on agriculture in the Midwest.

Five primary areas have been identified to be "centers of excellence". The core of these programs will be located in the laboratory. However, considerable work in each focal area will occur in other facilities. Cooperative projects will also be encouraged and solicited from other research institutions in and outside of South Dakota where similar needs exist. Major goals for each area are or will be developed.

The five centers are:

1. Genetics and Plant Breeding
2. Animal Stress
3. Natural Resources/Native Germplasm
4. Water Quality/Wetlands
5. Cellular and Molecular Biology

Technology transfer from the laboratory will be handled in several ways - the Extension Service, continuing education programs, newsletters, symposia, a computer network of biostress data, and a speakers' bureau. Some Extension staff will be housed in the laboratory, and this will expedite technology transfer.

The regional and national focus of the laboratory is already developing. The stress conditions that are prevalent in South Dakota are common in surrounding states and, to some extent, throughout the nation. South Dakota State University programs now interface directly with the Northern Crops Institute in North Dakota and other programs on the NDSU campus, including weed science and water quality. Animal research is being coordinated with the University of Missouri, Kansas State University and the U.S. Meat Animal Research Center in Nebraska. The University of Minnesota and SDSU are cooperating on one of six national Dairy Food Research Centers, and Iowa State University and SDSU are cooperating on a Ph.D. program in Agricultural Engineering.

The proximity of this laboratory to the major livestock-producing areas of the U.S. will establish the facility as a national center. The new building will enhance opportunities at South Dakota State University to attract both senior and junior scientists, post-doctorates and graduate

students. The undergraduate program will also benefit from the laboratory and should have a positive impact on enrollment. Greater funding success is anticipated with grants and contracts because of better facilities and equipment.

The idea has been presented to administrators, political leaders, agricultural leaders, the South Dakota and North Dakota Congressional delegations and agricultural advisory groups across these two states as well as to supporters in Nebraska, Minnesota, Montana, Wyoming and Iowa. The proposed facility received immediate support and endorsement by these groups. Congressman Tim Johnson has provided the leadership in developing House of Representatives support. Senator Tom Daschle of South Dakota has taken the leadership in working with Senator Quentin Burdick of North Dakota to initiate federal legislation for matching funds to build the Stress Facility at SDSU. Senator Larry Pressler has established the liaison with President Bush's administration and USDA on the project.

The South Dakota Senate and House of Representatives passed legislation sponsored by Governor Mickelson in the 1989 session to provide the state portion ($6.3 million) of the 50/50 state-federal match for the Northern Plains Biostress Laboratory. The total cost of the facility is $12.6 million. Congress provided $100,000 for a feasibility study and planning in 1988 and $1,700,000 for initial construction in 1989. A total of 4.5 million will be requested from Congress in 1990.

The USDA Cooperative State Research Service feasibility study of the project has resulted in an enthusiastic endorsement and a recommendation that the regional scope be expanded to a national focus. The most feasible and economic approach is to develop this as a national program. The 50/50 state-federal partnership is logical and realistic.

The effects of the 1988-89 drought are still with us, and the stresses related to that drought are found in plants, livestock and people. Nowhere has the entire complex of stress-related factors been tied together as is envisioned in this national laboratory. Since the stresses are indeed interwoven and interrelated in most cases, it is important that this approach be accepted and initiated at the earliest opportunity.

David A. Bryant, Dean
College of Agriculture and Biological Sciences
South Dakota State University
Brookings, South Dakota 57007-0191

WEDNESDAY, MARCH 28, 1990.

AQUACULTURE EDUCATION

WITNESSES

RONALD B. BUCKHALT, THE NATIONAL COUNCIL FOR AGRICULTURAL EDUCATION

TOM McILWAIN, THE NATIONAL COUNCIL FOR AGRICULTURAL EDUCATION

JASPER LEE, THE NATIONAL COUNCIL FOR AGRICULTURAL EDUCATION

Mr. WHITTEN. Next we will hear from Mr. Buckhalt, Dr. McIlwain, and Doctor Jasper Lee.

We are glad to have you back. It gives you a chance to say what you forgot to say the first time.

Mr. BUCKHALT. Yes, sir. We always welcome the opportunity to be here.

Mr. WHITTEN. I spoke at Jackson, Mississippi, some years ago at one floor of a hotel and they invited me to speak on the next one. I told them it was the first time I ever had a chance to say what I forgot to say the first time.

We are glad to have you.

Mr. BUCKHALT. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee, it is, indeed, a pleasure to appear before you today. I would like to summarize my testimony, if I could, and present the full text for the record.

With me today are Doctor Tom McIlwain, who is the Director of the Gulf Coast Research Laboratory in Ocean Springs. I think he spoke before this committee on Monday. On my left is Doctor Jasper Lee, Professor, and Head of the Department of Agriculture and Extension Education at Mississippi State. Both Doctor McIlwain and Doctor Lee serve as consultants to the Council on the matter of aquaculture education.

The Mississippi University's Research Consortium is also in support of the Council's efforts in aquaculture education, and they recognize the importance of aquaculture to future supplies of quality fishery products to our nation and the need to have people interested in and trained to expand aquaculture in our country.

The consortium which I referred to is made up of the chief research officers from the University of Mississippi, Mississippi State University, the University of Southern Mississippi, and Jackson State University. This group meets regularly to coordinate projects and other activities between institutions and to advise the Commission of Higher Education and others on the status of research and education projects in the State of Mississippi.

The National Council for Agriculture and Education, which I represent, is a nonprofit educational organization representing over a half million people involved in agricultural education, including the students—those are the FFA students—the State supervisors of agricultural education, teachers, and agribusiness. The Council is involved in upgrading the curriculum in our vocational agricultural education programs, including aquaculture.

There is a tremendous need for these 600,000-plus students in agriculture education to focus their attention on the rapidly emerging aquaculture industry. Why?

First, we are importing more and more fish, shellfish, and fish products at higher and higher costs while U.S. and worldwide consumer demand for this high-quality protein continues to increase.

Second, the concern of polluted ocean waters is further increasing demand for farm-fresh aquaculture products.

Third, aquaculture production utilizes existing U.S.-produced commodities as fish feed. We are talking primarily about corn and soybeans.

Fourth, aquaculture offers tremendous potential as alternative crops in rural communities. If we can replace $1 billion worth of imported fish, for instance, it is worth about $4 billion in terms of jobs for Americans.

Fifth, aquaculture education is a means to stimulate America's secondary education students and get them interested in science and math.

Aquaculture products are being grown in the U.S. in our local communities in ever-increasing numbers, but to capitalize on and accelerate the growth of that industry we need men and women to enter the aquaculture work force as trained professionals.

Water is also essential for American agriculture—in particular, the emerging and dynamic segment of agriculture called aquaculture. It depends on wise and efficient use of high-quality water for both plants and animals.

Young people and others need to understand the dynamic and changing nature of America's water supply. Teaching about aquaculture and the demands of fish for clean water is a means to impart new knowledge in that area.

Studying aquaculture in our classrooms fits into the agricultural curriculum so well because we can adapt our present agricultural knowledge and management base to fish, shellfish, and aquatic plants. The study in feeding and management of fish is not all that different from other animals, and growing plants in water is similar to hydroponics, now being taught in agricultural education.

An aquaculture education program will also teach students about international relationships, business management— particularly marketing and quality control.

Although not the primary purpose of this program, we believe additional young people will enter post-secondary study in aquaculture. There is a tremendous demand for aquaculture scientists. One of the limiting factors in aquaculture development is, according to one USDA aquaculture specialists, the industry has outrun its research base.

We are getting a lot of interest in the program from all around the country. I can name just a couple of the States that are interested in participating in putting together and testing curriculum. We are receiving inquiries from, of course, Mississippi, Iowa, Indiana, Idaho, Washington State, Florida, Texas, South Carolina, North Carolina, Virginia, Maryland, Pennsylvania, and Massachusetts.

Classroom teachers have been frustrated by the lack of good aquaculture curriculum for secondary students—we are talking

about high school. They have begun to develop their own teaching plan from various sources.

By way of background, last year the Council received initial funding of $85,000 from the Department of Agriculture and the Appalachian Regional Commission to survey existing curriculum and plan a program to infuse aquaculture education into the agriculture education curriculum. We have a copy of the document that we put together, and we earlier supplied one to the committee. I think, Bob, you probably have a copy of this back there somewhere. This is what the task force put together over the last eight months.

What we found is that existing curriculum is very uneven, to say the least. New material will have to be developed. Last year Congress appropriated $250,000 for that purpose. With USDA overhead, that figure is now $239,000. That is through the Cooperative States Research Service. However, the grant has not yet been made.

But new curriculum, alone, is not the answer. We have got to validate that curriculum. We have to develop visual support materials. We have to field test the curriculum and modify them before national dissemination. Teachers have to be trained to teach the new curriculum.

We are requesting $3.7 million for those purposes in 1991 and 1992.

Two of the people who will be assisting in this project are sitting here with me at the table today. Doctor Lee has been involved since 1987. He has agreed to serve as the chief curriculum writer. And, of course, Doctor McIlwain's Gulf Research Laboratory has been involved in teaching marine science since 1947.

Finally, we believe that aquaculture is agriculture and should be afforded the same assistance that USDA has given other commodities, including educational support.

We thank the committee for your time and would be pleased to answer any questions.

Mr. WHITTEN. We appreciate your statement. As you know, we on this committee have proven our interest in agriculture by staying on this subcommittee. Many others are more glamorous, but we have a job convincing everybody of how important agriculture is to the overall economy. We have had witnesses on your side of the table that have pointed out repeatedly that, if we didn't keep research up for the past 20 years, we would be hungry today with the size population we have.

We appreciate your appearance. We will do the best we can.

Mr. BUCKHALT. Thank you, Mr. Chairman.

Mrs. SMITH. We all appreciate this very much. You made an excellent statement. Your industry has outrun its research base, and we are all for research.

Thank you for being here.

Mr. BUCKHALT. Thank you, Mrs. Smith.

Mr. WHITTEN. Thank you very much.

Mr. BUCKHALT. Thank you.

[Mr. Buckhalt's prepared statement follows:]

THE COUNCIL
A national partnership for excellence in agriculture and education.

National Council for Vocational Technical Education in Agriculture
The Council
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Testimony of

Ronald B. Buckhalt
Program Specialist, Aquaculture
The National Council for Agricultural Education

Before the

Rural Development, Agriculture and Related Agencies
House Subcommittee on Appropriations

On a Project to

"Infuse Aquaculture Education into the Agricultural Education Curriculum"

March 28, 1990

Mr Chairman and members of the committee, Thank you for the opportunity to appear before you today on behalf of agricultural education. My name is Ron Buckhalt. I am project coordinator for the National Council for Agricultural Education on a program to "infuse aquaculture education into the agriculture education curriculum" in secondary schools across the country.

Accompanying me are Dr. Thomas D. McIlwain, Director of the Gulf Coast Research Laboratory at Ocean Springs, MS., and Dr. Jasper S. Lee, Professor and Head of the Department of Agriculture and Extension Education, Mississippi State University. These gentlemen can assist in answering any technical questions the committee might have.

Before we discuss our funding request we would like to make the committee aware of the credentials of those representing other institutions here with me today and of The Council.

The National Council for Agricultural Education, a non-profit educational organization, represents over half-a-million people in the agricultural education community including the: National FFA Organization, National Vocational Agricultural Teachers Association, National Association of State Supervisors of Agricultural Education, National Association of Teacher Educators in Agriculture, National Young Farmer Educational Association, Agriculture Division of the American Vocational Association, Postsecondary Agricultural Student Organization and the National FFA Alumni Association. The Council has experience in preparing and delivering educational materials and has ongoing relationships with teacher/educators at the 1862 and 1890 Land Grant Colleges and Universities, other state schools and universities, junior colleges, agriculture research organizations and agribusiness.

In 1917, with the passage of the Smith-Hughs Act, the U.S. government launched a highly successful effort to educate young men and women in and about agriculture. That delivery system, which includes all the organizations listed above, is tried and tested. It works. Some 8,000 high schools across the country have vocational agricultural programs involving nearly 600,000 studcents a year.

The Gulf Coast Research Laboratory (GCRL) which Dr. McIlwain directs was founded in 1947 and offers educational, research and service opportunities to over 59 affiliated institutions in Mississippi and colleges in 14 other states. The institution is internationally recognized as a specialized institution with a broad marine science curriculum and provides assistance to the seafood industry, related business and a variety of state and Federal agencies and private corporations. Students participate in lectures, laboratory sessions, field work and trips to several nearby aquaculture operations in Alabama, Louisiana and Mississippi. Laboratory advisors have worked with Mississippi Gulf Coast Community College in the establishment of an aquaculture technician program to meet the industry's growing need for qualified and trained personnel. GCRL also serves as part of a consortium funded by USDA to develop domestic shrimp farming . Members of the consortium include: GCRL, Oceanic Institute of Hawaii, Tufts University of Massachusetts, Texas A & M Agricultural Experiment Station, Waddell Mariculture Center of South Carolina, and the University of Arizona.

Dr. Lee serves as a consultant to The Council and has been actively involved in our aquaculture education project since 1987. In addition to being a nationally recognized expert in preparing curriculum and teaching teachers, Dr. Lee is also the author of

Commercial Catfish Farming which is being revised this year. We have asked Dr. Lee to serve as chief writer for the new aquaculture curriculum. And, as you know, Mississippi State is a leader in aquaculture research and technology transfer.

Aquaculture is one of the largest and fastest growing industries in the state. The current value of catfish sales at the pond bank is over $300 million this year. Approximately 400 producers devote 90,000 acres of ponds to this enterprise. Aquaculture is an integrated industry, with producers often owning feed mills and processing plants, and employing over 3,000 people in the state. Commercial production of redfish, hybrid striped bass, freshwater shrimp and crayfish are developing industries in Mississippi.

The Mississippi Universities Research Consortium is in support of The Council's efforts in aquaculture education in that they recognize the importance of aquaculture to future supplies of quality fishery products to our nation and the need to have people interested in and trained to expand aquaculture in our country.

The Mississippi Universities Research Consortium is made up of the Chief Research Officers from the University of Mississippi, Mississippi State University, University of Southern Mississippi and Jackson State University. This group meets regularly to coordinate projects and other activities between institutions and to advise the Commission of Higher Education and others on the status of research in the State of Mississippi.

Goals and Objectives of The Council's Aquaculture Education Program:
(1) To teach men and women who are interested in agriculture the principles of success in aquaculture. (2) To impart scientific principles and a recognition of the importance of properly managing our aquatic resources (environmental science). (3) To use aquaculture curriculum as a means to interest students in science (including biology and chemistry), and other relevant subjects such as international relations, water quality/quantity, hydrology, mathematics and business management, particularly marketing and quality control. (4) To encourage the integration of aquaculture in subjects taught by other teachers in the educational system and augment greater cooperation among the individuals. (5) To inspire secondary students to enter postsecondary study in aquaculture thereby providing many of the scientists we need. (6) To explore the tremendous potential of aquaculture as alternative crops and livestock in rural communities (rural economic development) (7) To reduce the dependance on foreign imports of fish and fish products. (8) To utilize excess U.S. commodities (corn and soybean) for protein conversion.

Background/Introduction:
There is a tremendous need for students in secondary, postsecondary and adult education to focus their attention on this rapidly emerging industry. Consider the following: First, we are importing more and more fish, shellfish and fish products at higher and higher costs while U.S. and worldwide consumer demand for this high quality protein continues to increase. Second, concern over polluted ocean waters is further increasing demand for farm fresh aquaculture products. Third, aquaculture production utilizes existing U.S. produced commodities as fish feed--corn and soybeans. Fourth, aquaculture offers tremendous potential as alternative crops in rural communities. If we can replace a billion dollars worth of imports it is worth 4 billion in jobs and employment for our people. Fifth, aquaculture education is a means to stimulate American's secondary education students to learn science and math.

Aquaculture products are being grown in the U.S. in our local communities in ever increasing numbers. But to capitalize on, and accelerate the growth of, that industry, we need men and women to enter the aquaculture workforce as trained professionals. And even if these students decide aquaculture is not a career path, we will have imparted scientific principles and a recognition of the importance of properly managing our aquatic resources.

Concern over the future availability of water for rural and urban uses and the impact of human activities upon its quality has intensified in recent years. Water quality has now emerged as one of the top priorities in American agriculture and is a national issue on the minds of political leaders. Program areas to be covered under this aquaculture education proposal include research and conservation. Water is essential for American agriculture. In particular, the emerging and dynamic segment of agriculture called aquaculture, depends on wise and efficient use of high quality water for both plants and animals. Young people and others need to understand the dynamic and changing nature of America's water supply. Teaching about aquaculture and the demands of fish for clean water is a means to impart new knowledge in this area.

Studying aquaculture in our classrooms fits into the agricultural curriculum so well because we can adapt our present agricultural knowledge and management base to fish, shellfish and aquatic plants. The study of feeding and managing fish is not all that different from that of other animals. And growing plants in water is similar to hydroponics now being taught in agricultural education.

Further, preliminary interests indicate that students and teachers are very excited at the prospect of being able to study this new subject in agriculture education. The Council has received numerous request from teachers, superintendents, state departments of agriculture and education and others involved in agriculture for aquaculture materials. Some teachers and school systems are so impatient with the lack of teaching materials they are developing their own programs.

It is clear then that not only will an aquaculture education program teach students about fish, shellfish and aquatic plant culture, but it will also teach them science (including biology and chemistry), international relationships, water quality/quantity, hydrology, mathematics and business management, particularly marketing and quality control.

If the demand for this information is as great as it now seems, we believe there will be considerable integration and cooperation among various disciplines, particularly at the secondary level. That is, biology, science, math and agriculture teachers will share facilities and materials to teach aquaculture science.

Although not the primary purpose of this program, we envision another significant benefit--additional young people will enter postsecondary study in aquaculture. We know that there is a tremendous demand for aquaculture scientists. One of the limiting factors in aquaculture development is, according to one USDA aquaculture specialist,"the industry has outrun its research base." To the extent that early involvement with aquaculture challenges a young person to pursue further education in this area, the industry and America will benefit

The Project:
On August 1, 1989, The Council hired a qualified education project specialist to begin managing this three phased, three year program. Under his direction The Council has already completed a world wide survey of existing curriculum which highlights the

uneven nature of secondary aquaculture education material. Completing this activity allows The Council to move expeditiously to phase one. The Council appointed a task force to serve as advisors on the project and has held two national meetings to receive input from leaders within the industry. This task force consists of individuals with aquaculture experience in government, education, agriculture and industry and specialists in agricultural education from around the country and will serve throughout the life of the project.

This preliminary work on infusing aquaculture into the agricultural education curriculum was funded through an $85,000 grant from the USDA through the Office of Higher Education. Funding was supplied by the Cooperative States Research Service, the Soil Conservation Service, the Extension Service and the Appalachian Regional Commission.

PHASE I/Designing and Developing Curriculum and Support Materials

In 1990, The Council will contract with technical aquaculture experts and curriculum writers to complete the first phase of the project--modifying existing material and writing new curriculum and laboratory exercises. This phase of the project is estimated at $239,000 and the Congress has already appropriated 1990 funds for this purpose. The curriculum and materials will be developed and written by teacher educators or curriculum specialists in agriculture, hired as contracted individuals for the project, and validated by other aquaculture technical specialists in the public and private sector. We would rely on the experiences of institutions representative of geographic areas of the country and different commercially viable species, for assistance in this activity. Generic curriculum would be modified to be specie and site specific.

PHASE II/Field-Testing Aquaculture Curriculum and Developing Audio Visual Support Materials

In phase two of the project (1991-92) The Council will provide funding to five sites to provide equipment for use in field testing the new material, train teachers and complete the development of support materials, including audio-visuals. This is the most extensive and expensive part of the project and is estimated at $3.7 million.

These five test areas will be representative of the major geographic areas of the U.S. and the commercial aquaculture species. The Council has received great interest in pilot participation from Mississippi, Florida, Idaho, Washington, Montana, Indiana, Iowa, South Carolina, North Carolina, Virginia, Maryland, Pennsylvania, Massachusetts and several other states. The Council's Aquaculture Task Force has made recommendations in the area of protocol for selecting test sites/states. The audio-visual materials will be developed after the curriculum and laboratory materials are completed in phase one. Phase two will also include making such modifications to the curriculum and laboratory exercises as necessary based on the results of the field testing supplied by the five test sites.

Teacher training for the pilot school instructors will begin the summer of 1991 and would include a minimum of 50 teachers/educators, 10 from each of five state or regional sites.

PHASE III/Implementation of Aquaculture Materials Through Infusion Within Secondary Vocational Agriculture Curriculum

Phase three plans include 1992 and 1993 summer workshop which would be the beginning of a nationwide program for training teachers throughout the country in the teaching of aquaculture to secondary, postsecondary and adult students in this country. This third phase of the project is estimated to cost $750,000. The Council believes we can utilize existing unplink/downlink satellite capabilities in a cooperative effort like those in the facilities found in Mississippi.

The Council will also conduct an evaluation of the effectiveness of this educational effort for attitudinal and cognitive achievement. At the conclusion of the test period each selected site should, on its own, continue this effort based on merit and continued geographic need and support. By this effort we will, in effect, have created five ongoing regional aquaculture training centers. We anticipate sustained funding from the state departments of education, local communities and the private sector to continue the support of this education effort.

In summary, Mr. Chairman, The Council requests a total of $4,450,000 over three years to implement this program. We believe it is a good and necessary program and would appreciated the committee's support. For Fiscal Year 1991 funding cycle we are requesting $3.7 million to train teachers, complete support materials and field test the new curriculum. Many of those funds will not be expended until 1992.

Again, thank you for the opportunity to appear before you today.

28-669 O—90——17

WEDNESDAY, MARCH 28, 1990.

BIOTECHNOLOGY CENTER—VIRGINIA TECH

WITNESSES

HON. RICK BOUCHER, A U.S. REPRESENTATIVE FROM THE COMMONWEALTH OF VIRGINIA

DR. JAMES D. McCOMAS, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Mr. WHITTEN. We will turn now to Congressman Boucher at this time. We have a rule that when a Member comes we accept his testimony out of order. We are glad to have him back with us again.

Mr. BOUCHER. Mr. Chairman, thank you very much for offering us this opportunity to appear before you today.

I bring with me today one of your former constituents, Doctor James McComas, who previously served as President of Mississippi State University.

Mr. WHITTEN. It is good to have him here. We have followed him with great interest through the years. We didn't like to give him up.

Mr. BOUCHER. Well, we don't ever intend to give him up. He is now the president of Virginia Tech and is doing an excellent job in that position. We are delighted to have him at the University.

Today we are coming before your subcommittee to request an appropriation in the amount of $4.5 million which is the Federal share to be matched by State and University funds for the construction of an Agricultural Biotechnology Center at Virginia Tech.

You were kind enough several years ago to ask USDA to examine the feasibility of this building. USDA has now reported that it is very feasible and that it is a good project. We would commend that report to you as you consider this.

I know that your time is limited, so I will turn the microphone over to Doctor McComas, Mr. Chairman.

Mr. WHITTEN. We are, indeed, glad to have you here.

Dr. MCCOMAS. Mr. Chairman, we——

Mr. WHITTEN. We still miss you at Mississippi State.

Dr. MCCOMAS. Thank you, sir. It is an honor to be here, and it is a pleasure to see you again, Mr. Chairman.

I would like to speak just a few minutes to the are of biotechnology, which I think is one of the most exciting areas on university campuses today. It is a system in which you can take genetic material—DNA—and insert it into another plant or animal or organism and cause it to behave in a way that you would like for it to behave. Scientists have done this in terms of growth hormones, they have done it in terms of degrading crude oil, and working on pesticides and other contaminants.

Just last week the Food and Drug Administration approved a genetically-engineered substance for making of cheese and other variety of dairy products.

Certainly these genetic materials can be inserted into animals and plants, and they can behave in ways that will cause plants to grow twice as fast as they might normally grow and fish to grow three times as fast as they might normally grow without such ma-

terials. Plants can be genetically engineered so that insects dòn't like them, and therefore you can reduce the pesticides.

There are even tobacco plants with firefly genes which glow in the dark, and strawberry plants which are frost resistent. The first in the list of bacterion plants and animals that have been engineered certainly perform a variety of important functions.

I would like to call attention to one of the genetic engineered materials that has been developed at Virginia Tech and is now being used in the Delta. It is called Agri-G. It is used in cotton damping off problems. It has been there now for about two or three years. We are also working on a similar material that would have the same impact on soybeans.

We have a large capability on our campus. We have been involved in this kind of research since the 1960s. We have more than 60 faculty members in various colleges and programs across the campus and 150 graduate students. We have some of our own genetic engineering staff members here today, one of whom is working on introducing genetic materials in milk that will cause blood to clot and can have medical purposes. So there are a variety of very exciting factors.

I think that the area, though, in which it shows the greatest promise is in the area of agriculture, where we can really capitalize on the technology we have.

The Japanese often have been ones that have taken our technology and have developed it into new materials, and so forth. I think we are at the place where if we don't capitalize on the research we already have, that we will lose out in this again. It is a way of keeping ahead of Brazil and other countries that have agriculture production where we will have advantages that they don't have at this particular time. Getting there first will make a difference.

We do have other people here, Mr. Chairman. If you have any questions that you would like to pose of me or them we would be glad to respond to them.

Mr. WHITTEN. I don't have any questions. We will follow your overall statement with real interest. On this committee, as I mentioned earlier, we are all interested. We find in the budget a whole lot of money is recommended for increases in other areas where we question whether we can go along with that in view of the need at the working level. As I say, we are convinced that this is a good activity and one that we would like to do. We will just have to do the best we can.

Dr. MCCOMAS. We appreciate it, Mr. Chairman.

Mr. WHITTEN. Any questions, Mrs. Smith?

Mrs. SMITH. No, sir. We do thank you for coming.

Dr. MCCOMAS. Thank you, Mrs. Smith.

Mr. WHITTEN. On a personal basis, I hope you will give my best regards to Ms. McComas.

Dr. MCCOMAS. Thank you, Mr. Chairman. It is a pleasure to be with you.

Mr. WHITTEN. Thank you very much.

Mr. BOUCHER. Thank you, Mr. Chairman.

[Dr. McComas' prepared statement follows:]

Testimony
of
Dr. James D. McComas
President
Virginia Polytechnic Institute and State University
Before
Rural Development, Agriculture and Related
Agencies Subcommittee
Committee on Appropriations
United States House of Representatives
Washington, D.C.
March 28, 1990

Biotechnology is a system of new methodologies which have changed forever the way in which biological research is conducted. The first major change was the ability to remove a specific piece of genetic information (DNA) from one organism and insert it into the genetic apparatus of a bacterial cell and have it function normally. In this way, bacteria were "engineered" to produce human insulin, human growth hormone and vaccines to such animal diseases as rabies and pseudorabies. Other bacteria have been produced which can degrade crude oil or pesticides. This technology resulted primarily from basic university research conducted in the United States, and appropriately our entrepreneurs quickly established a series of biotechnology companies in this country. The second major revolution in biotechnology is the ability to insert DNA from any source into plants or animals to produce a "transgenic" and thus change the genetics of these organisms. Already this technology has produced "transgenic" animals with much accelerated growth rates, animals which produce new proteins in their milk, plants with firefly genes so that they glow in the dark, plants which are resistant to herbicides and plants which produce an insecticide in their leaves. This partial list of examples is being extended almost weekly. These laboratory examples serve to illustrate the widespread applicability of the technology. The task now is to engineer crop plants and farm animals with desirable traits and move them into agricultural application.

Traditionally, most of the major advances in agriculture have come through understanding and manipulating the genetics of crop plants and farm animals. This research has made the United States a world leader in agricultural productivity and our research has helped

many other countries feed themselves. The "Green Revolution" of the 1960's and 1970's was an example of the use of genetic research to increase productivity of essential food grains in other countries. This work saved many lives and enriched the lives of countless others. Until recently plant and animal breeders were restricted to manipulating genetic traits from closely related species which they could breed and select hybrids for the desired characteristics. Along with the desirable characteristics came undesirable ones which had to be removed by time consuming back-crossing. Now, the breeder with the tools of biotechnology can "engineer" an organism with a precise set of predetermined traits. The possibilities are limited only by the imagination of fertile minds and the probability of commercial success. The time scale has been remarkably shortened and the possibilities for genetic improvement seem enormous. But, this type of biotechnology research can not be done by most of the classical plant and animal breeders who know what needs to be done. The reason they can't accomplish these wondrous feats is that they are not trained in this new complex methodology, and the scientists who are so trained know very little about farm animals and crops. Even those classical breeders who have labored to retrain themselves in this new biology have often been thwarted by the lack of facilities in colleges of agriculture in the United States. The agricultural laboratories designed for classical biology just are not suitable for doing this new type of science.

The Federal government supported the basic research in university laboratories which resulted in the current leadership of the United States in these biological revolutions, and the Federal government now needs to help the Land Grant Universities to merge the new and old agricultural genetics so that our producers and consumers will profit from the technology. If this is not done soon, we will lose our world leadership position, and the products will come from abroad. The Land Grant system of Agricultural Experiment Stations in cooperation with the Agricultural Research Service and the Cooperative State Research Service of the U.S.D.A. provides the United States with a unique and powerful means of integrating the new biotechnology rapidly with the best in crop and animal genetics. By providing new agricultural biotechnology facilities, our scientists can provide the means for continual leadership in agricultural productivity. In addition, our scientists are already working to allow our farms to produce specialty products which are needed by industries. These developments promise to

create a new farming industry producing new products for new markets.

At Virginia Tech we are striving to bring together our molecular biologists with our exceptional plant and animal breeders and other agricultural specialists. In this new frontier, none of these scientists know all the techniques that are needed so they must work together. The university currently does not have sufficient state-of-the-art laboratories and support services to allow this effort to be as productive as it should be. Virginia Tech applied to the U.S.D.A. first in 1987 for assistance in building a facility where these scientific interactions would produce the greatest potential impact. Our proposal for an AgriBioTech Center was peer reviewed by scientists from other universities and government laboratories. These experts determined that our proposal was supported by excellent science, and our proposed facility was given a very high scientific priority. Virginia Tech thereafter has received two years of support through the U.S.D.A. for planning and architectural design. The university has matched these funds from its own resources, and the Commonwealth of Virginia will be asked to fund one-half of the construction cost for the new facility.

Virginia Tech is not a latecomer to biotechnology, having had research and instruction in its forerunner disciplines since the mid-1960's. Research and teaching in this area have been strengths in several departments for many years. More than 60 faculty and more than 150 graduate students now pursue their academic objectives in various facets of biotechnology. They are located in such traditional departments as Agronomy, Animal Science, Biochemistry, Biology, Dairy Science, Chemical Engineering, Microbiology, Plant Pathology and many others including the College of Veterinary Medicine.

The university already has invested several million dollars on remodeling older laboratories to make them useful for biotechnology. We have been able to hire a cadre of top young scientists who are able to work closely with our strong base in traditional agriculture. But, we do not have sufficient quality research space and support services which this interdisciplinary science requires.

A research program which the university has been able to support in transgenic farm animals is a good example of the multidisciplinary nature of this new biology. The project was conceived by a microbiologist and a chemical engineer who wanted

to produce a human protein which was needed by the American Red Cross to save the lives of people suffering from blood clotting disorders and circulation problems. The only supply of this protein is to isolate it from out-dated human blood. If every pint of blood donated in the world was processed, there would still be a critical shortage of this needed protein. The strategy of our scientists is to introduce the genetic information (DNA) for making the human protein into farm animals and to have the protein made in the animal's milk from which it could be isolated for biomedical applications. The research team has grown to include the original microbiologist and chemical engineer plus an embryologist, an expert in vitro fertilization, a mammary physiologist, two animal breeders, an endocrinologist, three molecular biologists plus numerous graduate students in several departments and colleges at Virginia Tech. The effort also encompasses scientists from the American Red Cross and the National Institutes of Health. If the effort is successful, it will pave the way for production of pharmaceutical products in milk. This wedding of biomedical science to agricultural science through the medium of biotechnology could provide an entirely new market for agricultural products, spawn a new industry and save countless lives by providing a cheap and plentiful supply of pharmaceuticals that are now very expensive.

The Commonwealth of Virginia has funded our programmatic initiative in Biotechnology. This has allowed us to hire a Director who will coordinate and promote our multidisciplinary efforts in instruction, research and public service. As Director of the AgriBioTech Center, he will bring together teams of faculty from across college and department boundaries to address important problems to agriculture in Virginia and the nation. The Commonwealth also has provided funds for certain biotechnology support facilities and has provided several million dollars for new scientific equipment in the last two years. This investment in basic research now has the high probability of creating new products and new industries for better health and nutrition, a cleaner environment and the economic advancement of our state and the nation.

The new Agricultural Biotechnology facility at Virginia Tech will be physically attached both to one of our top research departments in the College of Agriculture and Life Sciences and to the Research Center of the Virginia-Maryland College of Veterinary Medicine. The proposed facility will house the main support laboratories for DNA manipulations, cloning, protein sequencing,

bioengineering and monoclonal antibody production. These service laboratories will support the research efforts of faculty and graduate students across the campus. Modern instructional laboratories will be available for training undergraduate students, graduate students, technical staff and faculty. The AgriBioTech Center will have a public service educational program for Extension personnel, school teachers and the general public. The Agricultural Biotechnology facility will be the focal point for those activities. Molecular biologists from agricultural departments will remain in their departments where they can best interact with their discipline, but they also will participate in multidisciplinary research at the AgriBioTech Center. Students will be able to integrate the new biology with classical biology and agricultural sciences to draw the best from their teachers in the various disciplines. Start-up biotech companies, such as TechLab, Inc., have moved into the Virginia Tech Corporate Research Park to take this new agricultural biotechnology rapidly to the marketplace.

In conclusion, I believe our University has the mix of talented faculty and students, the breadth of competence in the basic sciences, agricultural sciences, engineering and veterinary medicine to move us rapidly to the forefront of exciting new horizons in research and applications based on biotechnology. The facility which we are requesting is crucial to our ability to accomplish the ambitious goals that we have set for ourselves and the citizens of our state, region and nation.

WEDNESDAY, MARCH 28, 1990.

NEBRASKA CENTERS FOR SCIENCE AND TECHNOLOGY

WITNESSES

DR. MARTIN MASSENGALE, UNIVERSITY OF NEBRASKA
DR. LEE B. JONES, UNIVERSITY OF NEBRASKA
DR. CHARLES P. SCHROEDER, UNIVERSITY OF NEBRASKA
DR. JAMES E. McCLURG, UNIVERSITY OF NEBRASKA

Mr. WHITTEN. Next we will hear from Doctor Massengale. We are glad to have you here. I hope you will talk to your Congresswoman and convince her to change her mind.

Mrs. SMITH. Mr. Chairman, may I——

Mr. WHITTEN. Mrs. Smith, would you like to introduce this gentleman?

Mrs. SMITH. Yes. I would like to extend a very special welcome to these friends from our great University of Nebraska: Doctor Massengale, who does such a great job as President; Doctor Lee Jones, our Executive Vice President; Mr. Charles Schroeder, who is the Vice President of the University of Nebraska Foundation; and Doctor James McClurg, who is the President of Harris Labs. They are here in the interest of our Nebraska Center for Science and Technology, which everybody in Nebraska has a deep, deep interest in.

The floor is all yours, Doctor Massengale.

Dr. MASSENGALE. Thank you, Mrs. Smith and Mr. Chairman.

I want to say first, Mr. Chairman, that we agree with you: we would like to also keep her here to be a companion of yours on this committee.

Mr. Chairman and Congresswoman Smith and other members of the committee, I am pleased to have the opportunity to testify today on behalf of the Nebraska Centers for Science and Technology. We appeared before you last year, and we are grateful for support that you have given this project in the past.

This year we will take a few moments to update you on the plans for the remainder of the funds for the project. We have submitted a statement, so I will be rather brief in my comments.

There are several elements in the Nebraska plan which we believe make it unique. To begin with, the Nebraska research initiative will contribute $90 million to the State's effort to develop and commercialize new technologies. These funds represent a profound commitment by Nebraska legislators, by State government, private business, and private citizens toward ensuring a strong economic base for the State, the region, and the nation. This commitment is unique and is a part of a longstanding tradition of Nebraska in self-help and mutual assistance.

In order for us to maximize the impact and return on the Nebraska commitment and to take the next step toward a successful program, we need to build the Nebraska Centers for Science and Technology; thus, we are here seeking your help for us to complete the project.

With the advice of businessmen and scientists from across Nebraska and the nation, the University has developed a unique re-

search effort taking advantage of our proven strengths in plant an animal sciences, processes, technologies, and our successful experience with the systems approach to problem solving.

The Centers will bring into a single, cooperative setting the resources of biological chemistry, chemical engineering, and biotechnology. You just heard my colleague, Doctor McComas, talk about some of the things from biotechnology.

The activities of the Centers will include research and development and the transfer of new products, processes, and technologies in: genetic engineering, chemical engineering, and chemical interrelationships within biological systems and how these relate to private industry.

Intensive academic work to ensure a new generation of scientists in agriculture, energy, and the environment would also be part of this plan.

Faculty in biological chemistry are recognized leaders in their field in photosynthesis. Chemical engineers at the University have a distinguished record in developing industrial chemicals from biomass, a process that will contribute to the economic viability and of agriculture and energy independence in our nation.

Biotechnology involves scientists with demonstrated strength in both plant and animal biology. These teams of scientists complement each other, and, when brought together into a single facility that we have planned, they will be able to share their expertise and produce a synergy that is not likely to occur when they are in disjointed units.

Let me say by transcending the traditional barriers sometimes between disciplines and encouraging interactions that these programs will produce practical solutions to problems in the real world that you and I face each day.

We expect to see three primary outcomes from the development of this Center.

First, basic research will result in new and expanded knowledge of biological materials and processes. Current research is leading us to new and more effective kinds of biodegradable plastics. The development of polymers from biomass—for instance, turning ethanol into ethylene and ethylene into polyethylene is one of the kinds of projects that we have underway here.

Other specific areas where we anticipate developments are in the production of crops under conditions of stress, the diagnosis and treatment of animal and human diseases, and other researches of this kind.

I may also say that we are designing new techniques to move us ahead with the kinds of work that we just talked about in biotechnology.

Finally, products and processes will be developed which can be transferred from the laboratory banks to private industry in a setting designed to assist and speed up that process into the commercial channels.

When we consider the problems of global warming, of rapidly-growing populations, world hunger, drought, disease, and threats to our environment, these will demand solutions through biotechnology—solutions of the kind that I believe we are uniquely prepared to provide in this new Center.

Finally, Mr. Chairman, let me say that through the Nebraska research initiative we have brought on board some outstanding researchers at the University that we believe will enhance the productivity. We have a plan. We have an impressive level of financial commitment from all parts of our State. Today we seek your support in completing the plan which we have outlined in the past to you to help with Federal funds for the Nebraska Centers for science and technology.

Again, I am most grateful for the opportunity to appear before your committee to testify on behalf of this project.

My colleagues and I would be pleased to answer any questions, Mr. Chairman, that you or other members of the committee might have.

Thank you.

Mr. WHITTEN. Thank you very much. We appreciate your appearance here. Your testimony speaks for itself. As I said earlier, we will have to do the best we can in view of the budgetary situation, but we will work at it.

Dr. MASSENGALE. We understand, and we thank you for that interest.

Mr. WHITTEN. Any questions?

Mrs. SMITH. Yes. I have two or three questions.

We do appreciate all of you folks coming here. Let me ask you particularly, Doctor McClurg: as the CEO of a strongly science-based major Nebraska business, how do you assess the need for this Center? Could you just discuss that very briefly?

Dr. MCCLURG. The Center has a lot of benefits to it. The State has already committed to raise $90 million to support this concept, and we have done a lot of examination of our future in Nebraska in our agriculture-based economy over the last five or six years. One thing we have agreed on is that the University has a major role in bringing our people and our production mechanisms together, and we need the kind of research and training and development of new products that this kind of Center can bring to focus our population and our resources on the future.

We are still going to be in the Midwest where our strongest resources are our soil and our water and our people.

We need to adapt to the next generation to be able to bring them to bear and continue to be able to supply food and fiber to the world. This Center focuses on that, and Nebraska business is very solidly behind it and is showing their support by raising the money for it.

Mrs. SMITH. I appreciate that answer. I must tell you that not everybody that comes to that table for money can say they have already raised $90 million for their State's share.

Let me ask a question of you, Mr. Schroeder. In what specific ways is the foundation supporting the Nebraska research initiative?

Dr. SCHROEDER. Mrs. Smith, as you know, the University of Nebraska Foundation is responsible for raising private-sector dollars to support the University of Nebraska. In that role we intend to be full partners in developing the Nebraska Centers for Science and Technology.

In August of 1988 we announced a five-year initiative with a $30 million goal to support principally the human resource of the University as part of this broad-based partnership. As of March of 1990, just two years into that project, we have already raised over $20 million toward the $30 million goal.

Of interest to you, we have added 37 new professorships to the University of Nebraska campus, which is a phenomenal turnaround in faculty support from the private sector—12 new graduate fellowships, several million dollars in support of research and equipment funds, several million dollars in support of our libraries, and broader-based research funds that support faculty in various research endeavors.

We believe that the private sector, through the foundation, has really stepped forward and said this project is important and we intend to play a part in it.

Mrs. SMITH. Doctor Jones, why do you think Nebraska is a good place for us to put some more Federal dollars?

Dr. JONES. Mrs. Smith and members of the committee, I think I would probably respond to that very briefly in two or three different ways.

First, at the University I think we have demonstrated the research leadership in these particular areas that this Center is designed to pull together and further. These are areas or fields which are critically important to the future of agricultural production, as well as plant, animal, and human biology—or, in this case, biotechnology.

It has already been mentioned that our demonstrated financial commitment from all levels of government—certainly State government and private sources—shows our willingness to do as much as we can on our own to make this a reality.

Finally, I think I would point out that we have, certainly in our view, a remarkable depth of experience in solving problems associated with agricultural productivity. That places us in a unique position, we believe, to offer the State and the region and the nation the type of productive research that we are going to need to meet the problems that many observers anticipate for the 21st century.

Mrs. SMITH. Thank you all for being here.

Thank you, Mr. Chairman.

Mr. WHITTEN. Thank you very much. We appreciate your appearance.

Dr. MASSENGALE. Thank you.

[The prepared statement of the witnesses follows:]

Testimony
by

Dr. Martin A. Massengale
Interim President, University of Nebraska System
Chancellor, University of Nebraska-Lincoln

Dr. Lee B. Jones
Executive Vice President and Provost
University of Nebraska System

Mr. Charles P. Schroeder
Vice President, University of Nebraska Foundation

Dr. James McClurg
President, Harris Labs
Member, University of Nebraska Science Advisory Committee

Before the
Rural Development, Agriculture, and Related Agencies Subcommittee

March 28, 1990
1:00 p.m.

Mr. Chairman, Congresswoman Smith, members of the Subcommittee, thank you for the opportunity to testify on a topic of critical importance to the State of Nebraska--the Nebraska Centers for Science and Technology. The Nebraska Centers project is not new to this Committee. In FY 1989, the University of Nebraska received planning funds for the Nebraska Centers from the Department of Agriculture. Next, we appeared before you with a plan to make the Nebraska Centers a reality. In the last fiscal year, we received $3 million in construction funds. Today, in accordance with our plan, we are seeking $9 million to keep this important project on track.

Background

To strengthen and diversify our state and national economies, we must continue to expand federal, state, and local investment in science and technology. Further, we must continue to focus attention on our lagging ability to move the results of basic research from the laboratory to the market place. As you know, Japan's success in a number of high tech industries is due in large part to their ability to commercially exploit new technologies--often technologies first developed in the United States.

Our universities have the strongest basic research programs in the world, and our industries have the strongest applied

research programs in the world. Our challenge is to more closely link these education, research, and training efforts so that we will be able to lead the world well into the next century. The University of Nebraska and our State have embarked on a course to play a major role in this leadership.

Nebraska is striving to foster a new spirit of cooperation and to build a successful new partnership to focus the talents and resources of the University of Nebraska, private industry, and government on new solutions for the region and the nation. We must strengthen our ability to develop our human resources and encourage the development and transfer of new knowledge to new applications, new products, and new processes.

The new research thrust in Nebraska, of which the Nebraska Centers for Science and Technology is a critical element, has captured the collective imagination of our research faculty, Nebraska political leaders and the private sector in the State. The Nebraska Research Initiative, supported by our Governor and Legislature and the private sector will contribute $90 million over five years to the State's effort to develop and commercialize new technologies. The University is intensifying its research efforts in areas of strength, and is hiring additional highly regarded scientists in these and related areas. The Nebraska Centers for Science and Technology is the next step needed to make the Nebraska dream a reality.

Objectives

The State of Nebraska initiative has five objectives:

International Leadership in Advanced Technologies - The United States, while leading the world in basic research, has failed to realize the commercial potential of its technological strength. Through the Nebraska Centers, the University will stimulate development and commercialization of biotechnology.

Diversify the Economy of the American Heartland - The Midwest must now develop the educational, industrial, and human resources required to attract and sustain new industries and diversify its economic base. The Centers will provide the education, training, research, and technology transfer opportunities needed to propel the Midwest to the forefront of the advanced technology revolution.

Foster Joint Industry, University, and Government Research - The federal government, currently the largest investor in basic research, private industry, the largest investor in applied research, and the universities, where the preponderance of research is conducted, must invest in the transfer of the products of this research to successfully exploit the benefits of American ingenuity and creativity.

Improve Education and Research Through Integration of Programs - The Nebraska Centers for Science and Technology will focus the University's existing efforts in biotechnology, and strengthen all programs through a multi-disciplinary approach. While others are also now exploring a systems approach, the University of Nebraska has a successful track record.

Provide a Central Research Facility and Industrial Applications Center to Support the Development and Commercialization of New Technologies - The construction of a central research and development complex will allow the University to physically and programmatically link the various components of our biotechnology efforts. In addition, the complex will provide a single access point for industry and government researchers seeking to initiate or supplement joint research endeavors.

The Nebraska Centers for Science and Technology

Organization of the Nebraska Centers

The University of Nebraska, with the advice and guidance of scientists and businessmen across Nebraska and the nation, has developed a unique research effort. The University has proven strengths in plant and animal sciences, process technologies and the application of a systems approach to problem solving. The Nebraska Centers for Science and Technology will provide an opportunity to coordinate and focus those strengths in a multi-disciplinary framework.

More than simply a biotech unit, the Centers will bring into a single cooperative setting the resources of three academic areas: Biotechnology, Biological Chemistry and Chemical Engineering. Scientists will focus on targeted basic and applied research critical to our regional and national economic security, and which complement activities funded by the Department of Agriculture. Activities of the Centers will include research, development and the transfer of new products, processes, and technologies to private industry in agriculture, medicine, energy and the environment. The unique combination of skills and knowledge in genetic engineering, chemical engineering, and the chemical interrelationships within biological systems will lead to the development of new technologies that will improve plant and animal productivity.

Faculty in biological chemistry are recognized leaders in the field of photosynthesis, a biological process critical to the sustenance of human life. The Chemical Engineering Department at the University of Nebraska has a distinguished record in developing industrial chemicals from biomass, a process that will contribute to both the economic viability of agriculture and the energy independence of the nation. The new Center for Biotechnology involves scientists with demonstrated strength in plant and animal biotechnology. These vibrant and complementary resources brought into close proximity, sharing the challenge of

complex problems and high expectations, can produce important results that simply would not flow from disconnected units.

The University of Nebraska has been a leader in demonstrating the value of a systems approach to solving problems and capturing opportunity. The Food Processing Center, the Agribusiness Program, the Industrial Ag Products Center, the Nebraska Technical Assistance Center and the Center for International Trade Policy are examples of successful programs developed at the University of Nebraska. By transcending the traditional boundaries between academic disciplines, these programs have produced solutions sensitive to the complexity of the real world. This approach has proven that the interchange of ideas, technologies and methods can be effective and, in fact, encourages new levels of creativity.

The Nebraska Centers will also provide an invaluable complement to the teaching mission of the University. In particular, the facility will provide expanded capacity for instruction in biochemistry, biotechnology, and chemical engineering for graduate students, undergraduates and high school students. We plan to continue the statewide outreach programs in these areas, including summer research programs for high school science teachers.

Focus of the Nebraska Centers

The focus for the Nebraska Centers will be three areas in which the University of Nebraska has a tradition of excellence, and in which the University has recently been able to attract additional world-class scientists--largely through the State and private support provided in the Nebraska Research Initiative.

Plant Improvement - The University of Nebraska has a number of nationally-recognized programs relating to plant improvement and a strong base of research faculty on which to build. Among the important work already being done in this area at Nebraska include research on control of plant viruses, photosynthesis, plant genetic engineering, and the dynamics of plant growth.

Animal Agriculture - Similarly the University of Nebraska has a long and distinguished history in the area of animal agriculture. Current research efforts include work on improvement of animal fertility, hormonal control of animal genes, and development of new vaccines. Work in these areas at Nebraska has led to the development and successful commercialization of new and nutritious meat products, rapid and accurate diagnosis of diseases in cattle and swine, and marketing of widely used new vaccines.

Process Technology - Bioprocessing and new product development for agricultural products have received strong emphasis at the University of Nebraska. Nebraska scientists are engaged in developing industrial chemicals from biomass, creating new starch-based plastics with a wide range of uses and

developing new value-added products from the plant and animal output of America's farms.

Results from the Nebraska Centers

The Nebraska Centers for Science and Technology will provide a facility to support the University's biotechnology missions related to research and technology transfer. A central goal of the Nebraska Centers is the solution of practical problems which may have significant impact on the economy of the State and the nation. Through the Nebraska Centers for Science and Technology, we expect the following principal results:

First, basic research will result in new and expanded knowledge of the fundamental processes and relationships which occur plants and animals, leading to an enhanced capacity for their management and improvement.

Second, new techniques will be discovered for combining, altering, and influencing biological systems and materials, physically or chemically.

Third, products and processes will be developed which can be transferred from academe to private industry. This expanded knowledge base will contribute to quality of life through the diagnosis and treatment of animal and human diseases, the more efficient production of food under less than optimum conditions, the discovery of renewable and affordable sources of energy, and the therapeutic and preventive measures required to achieve a quality environment.

Finally, undergraduates, graduate students, and post-graduates at the University will have a state-of-the-art facility in which to further their science education and their research, and pre-college and undergraduates will be exposed to an exciting and rewarding scientific realm, and encouraged to pursue the sciences as a career option.

State of Nebraska Support

The State of Nebraska proposes to play a lead role in the national effort to develop and rapidly commercialize technologies through the initiation of a multi-disciplinary research effort. To sustain this, our Governor has pledged $60 million over five years for research and development in targeted areas. Twelve million has been appropriated in the last two years. The new funds will be added to the University's base budget in annual increments of $4 million. Thus, at the conclusion of the five year thrust, $20 million will have been added to the University's annual budget base for future support of the state research initiative.

In addition, the University of Nebraska Foundation has pledged to raise over $30 million for faculty and equipment to support Nebraska's research effort. The Foundation is over two-thirds of the way toward meeting this goal. The entire state and local contribution amounts to an unprecedented $90 million over the first five years in program funds for cost-share of which over $32 million is already in hand or committed.

We feel that this unique partnership of state, federal, and private support for new iniatives in areas of traditional excellence at the University of Nebraska will result in a highly successful education, research, and technology transfer effort.

Mr. Chairman, thank you for the opportunity to testify. We would be pleased to answer any questions you might have at this time.

WEDNESDAY, MARCH 28, 1990.

ST. JOSEPH CENTER FOR FOOD MARKETING

WITNESSES

HON. WILLIAM H. GRAY III, A U.S. REPRESENTATIVE FROM THE COMMONWEALTH OF PENNSYLVANIA

DANIEL J. HILFERTY, ST. JOSEPH'S UNIVERSITY OF PENNSYLVANIA

DR. PATRICK KIRSCHLING, ST. JOSEPH'S UNIVERSITY OF PENNSYLVANIA

Mr. WHITTEN. We turn now to our colleague, Honorable William Gray, the majority whip.

Bill, we are glad to have you before us.

Mr. GRAY. It is always good to be in your presence, Mr. Chairman.

Mr. Chairman and members of the committee, I am pleased to introduce to you today Mr. Daniel Hilferty, Special Assistant to the President of Saint Joseph's University in Philadelphia; and Doctor Patrick Kirschling, Professor at the Saint Joseph's Department of Food Marketing.

Mr. Chairman and colleagues, since its founding in 1851, Saint Joseph's University has been a leader in education and a great asset to the Philadelphia community. Indeed, Saint Joseph's University is an asset to the entire Delaware Valley Region and the nation.

Saint Joseph's is proposing to establish a Center for Food Marketing designed to benefit farmers, farm cooperatives, and small agricultural and food producers in their efforts to successfully market their goods. Saint Joseph's' proposal is innovative and, I believe, the first of its kind designed to help our farmers and food producers develop the marketing mentality they will need to compete both at home and abroad.

Mr. Chairman and members of the committee, this subcommittee and the U.S. Department of Agriculture have stressed that successful marketing is vital to the retention and expansion of markets for U.S. agricultural products; however, little is done each year to help our farmers and food producers market their goods.

USDA has encouraged efficient production, but has done little to emphasize effective promotion. The Saint Joseph's program in food marketing is the foremost of its kind in the nation.

The proposal being made to you today, Mr. Chairman, will allow Saint Joseph's to expand its current program into a Center for Food Marketing which will become a true national resource to farmers and the food industry. I believe it is an idea which is both timely and worthy of USDA funding.

I appreciate your granting, Mr. Chairman, this opportunity for Saint Joseph's to testify and also allowing me to come back home and to appear before you.

I will now turn it over——

Mr. WHITTEN. We are glad to have you.

Mr. GRAY. It is good to appear before you. I will turn it over to Mr. Hilferty and then to Doctor Kirschling. Thank you for allowing me to introduce them. I must ask your indulgence—I must return to my other duties.

Mr. WHITTEN. We understand. We are glad to hear from you.

Mr. HILFERTY. Thank you, Mr. Chairman, and thank you, Congressman Gray. You have been a strong champion of Saint Joseph's for many years and we appreciate your support in Congress.

Mr. Chairman, as the Congressman said, I am Daniel Hilferty, Special Assistant to the President of Saint Joseph's University in Philadelphia. With me is Doctor Patrick Kirschling, a Professor of the Saint Joseph's Food Marketing Department.

In the interest of time, Mr. Chairman, I would like to summarize my statement and ask that my formal written statement and concept paper be accepted.

Mr. WHITTEN. That will be fine. They will appear in the record at the end of this appearance.

Mr. HILFERTY. Mr. Chairman, as Congressman Gray has stated, Saint Joseph's has a unique, innovative proposal designed to help farmers, farm cooperatives, and small- to medium-sized food producers become more market oriented and eventually more competitive both in the United States and abroad.

Mr. Chairman, as your subcommittee and the USDA have stated time and time again, successful marketing is vital to retention and expansion of markets for U.S. agricultural goods. Ability to produce agricultural goods is not enough. Producers must be aware of the desires of consumers who buy their goods and tailor their goods to that demand.

Farmers are not currently involved to any great extent in promoting their products among consumers, but they should be. The marketing efforts of the agricultural and food sector will determine whether or not the United States can meet the challenge of satisfying changing consumer demands at home and capturing changing markets abroad.

Mr. Chairman, farmers and food producers recognize this situation. According to a 1987 report sponsored by the USDA's Cooperative State Research Service, U.S. farmers consider marketing and agricultural business management to be the most important areas that will produce farm profitability in the future. Farmers must develop and incorporate these skills in every aspect of production, and we need to give them the help they need to learn how to do it.

Mr. Chairman, Saint Joseph's University is committed to doing just that. The Saint Joseph's Department of Food Marketing is the national leader in food marketing education and the academic home of the U.S. food industry. We have worked closely with the Pennsylvania Department of Agriculture, Pennsylvania Farm Cooperatives, and food producers throughout the nation on various food marketing, research, and education programs.

We would like to expand our service to the nation's farmers and the food industry by establishing a Center for Food Marketing on our campus which we believe can become a true national resource.

Saint Joseph's University intends to raise more than $30 million toward the development of the Center and is hopeful that your subcommittee and the Congress will find our proposal worthy of Federal contribution.

Thank you, Mr. Chairman.

At this time I would like to call on Doctor Patrick Kirschling, who is a farmer in his own right and, again, a member of our Food Marketing Department.

Mr. WHITTEN. We will be glad to hear from you.

Dr. KIRSCHLING. It is my pleasure, Mr. Chairman, to be here in front of you.

I find it kind of strange to come before you as an academician and a marketing professor, having come from the farm. I was born and raised on a farm in New Jersey—primarily fresh vegetable production, but also for processing.

The thing that I would emphasize that your committee consider, Mr. Chairman, is the importance of the marketing in the over sense of agriculture. You have been hearing proposals that really are targeted to keeping our production capacity at the forefront of the world, but I would urge your committee to consider the marketing component, as well.

Having come from the farm background, the one thing that struck me in my farm experience and my practical experience in that kind of a capacity, and also my educational experience at Rutgers University for my master's in agricultural economics and marketing, and my Ph.D. from Purdue University, has been the importance of understanding what the marketplace wants before we go to produce it. I think that is what we at Saint Joseph's University can bring to your particular interest in preserving agriculture as a dominant industry in this particular country and in the world.

We would offer that you invest in the people at Saint Joseph's University in the food marketing program to deliver that to you and your committee and your interest in the agricultural industry.

We have got a 25-year history and a track record which we will investigate and have you look at, and we would hope that your consideration for our program would be a positive one.

Thank you.

Mr. WHITTEN. Thank you very much. As I said earlier, all the members of this committee have a direct interest in agriculture. We recognize its importance and will do the best we can. We have competitors for the Federal dollar, as you know, including problems with the budget levels. We will do the best we can. We do appreciate your appearance.

Dr. KIRSCHLING. We know that. Thank you.

Mr. HILFERTY. Thank you, Mr. Chairman and Mrs. Smith.

[The prepared statements follow:]

THE HONORABLE WILLIAM H. GRAY, III

STATEMENT
BEFORE THE
AGRICULTURE APPROPRIATIONS SUBCOMMITTEE
MARCH 28, 1990

MR. CHAIRMAN, I AM PLEASED TO INTRODUCE TO YOU TODAY, MR. DANIEL HILFERTY, SPECIAL ASSISTANT TO THE PRESIDENT OF ST. JOSEPH'S UNIVERSITY IN PHILADELPHIA AND DR. PATRICK KIRSCHLING, PROFESSOR OF THE ST. JOSEPH'S DEPARTMENT OF FOOD MARKETING.

MR. CHAIRMAN, SINCE ITS FOUNDING IN 1851, ST. JOSEPH'S UNIVERSITY HAS BEEN A LEADER IN EDUCATION AND A GREAT ASSET TO PHILADELPHIA. INDEED, ST. JOSEPH'S UNIVERSITY IS AN ASSET TO THE ENTIRE DELAWARE VALLEY REGION.

ST. JOSEPH'S IS PROPOSING TO ESTABLISH A CENTER FOR FOOD MARKETING, DESIGNED TO BENEFIT FARMERS, FARM COOPERATIVES AND SMALL AGRICULTURAL AND FOOD PRODUCERS IN THEIR EFFORTS TO SUCCESSFULLY MARKET THEIR GOODS. ST. JOSEPH'S PROPOSAL IS INNOVATIVE AND, I BELIEVE, THE FIRST OF ITS KIND DESIGNED TO HELP OUR FARMERS AND FOOD PRODUCERS DEVELOP THE "MARKETING MENTALITY" THEY WILL NEED TO COMPETE BOTH AT HOME AND ABROAD.

MR. CHAIRMAN, YOUR SUBCOMMITTEE AND THE U.S. DEPARTMENT OF AGRICULTURE HAVE STRESSED THAT SUCCESSFUL MARKETING IS VITAL TO RETENTION AND EXPANSION OF MARKETS FOR U.S. AGRICULTURAL PRODUCTS. HOWEVER, LITTLE IS DONE EACH YEAR TO HELP OUR FARMERS AND FOOD PRODUCERS MARKET THEIR GOODS. USDA HAS ENCOURAGED

EFFICIENT PRODUCTION BUT HAS DONE LITTLE TO EMPHASIZE EFFECTIVE PROMOTION.

THE ST. JOSEPH'S PROGRAM IN FOOD MARKETING IS THE FOREMOST OF ITS KIND IN THE NATION. THE PROPOSAL BEING MADE TO YOU TODAY WILL ALLOW ST. JOSEPH'S TO EXPAND ITS CURRENT PROGRAM INTO A CENTER FOR FOOD MARKETING WHICH WILL BECOME A TRUE NATIONAL RESOURCE TO FARMERS AND THE FOOD INDUSTRY. I BELIEVE IT IS AN IDEA WHICH IS BOTH TIMELY AND WORTHY OF USDA FUNDING.

I APPRECIATE YOUR GRANTING ST. JOSEPH'S THE OPPORTUNITY TO TESTIFY BEFORE YOU TODAY, AND I WOULD LIKE TO TURN IT OVER TO MR. HILFERTY.

TESTIMONY
BY
MR. DANIEL J. HILFERTY
SPECIAL ASSISTANT TO THE PRESIDENT
ST. JOSEPH'S UNIVERSITY
BEFORE THE
HOUSE AGRICULTURE APPROPRIATIONS SUBCOMMITTEE
WASHINGTON, D.C.
MARCH 28, 1990

Mr. Chairman, thank you for giving me the opportunity to testify today. I am Daniel J. Hilferty, Special Assistant to the President at St. Joseph's University in Philadelphia. With me today is Dr. Patrick Kirschling, Professor of the St. Joseph's Department of Food Marketing.

Mr. Chairman, as Congressman Gray has stated, St. Joseph's University has a unique, innovative proposal designed to help farmers, farm cooperatives, and small to medium-sized food producers become more market-oriented and, eventually, more competitive both in the U.S. and abroad.

As you know, Mr. Chairman, food and agriculture are America's biggest business. Agriculture is our number one dollar earner in world trade and a key component -- if not the key component -- for a viable U.S. economy. The U.S. Department of Agriculture has stressed that successful marketing is vital to retention and expansion of markets for U.S. agricultural goods. Ability to produce agricultural goods is not enough. Producers must be aware of the desires of consumers who buy their goods and tailor their goods to demand. Farmers are not currently involved in promoting their products among consumers, but they should be. The marketing efforts of the agricultural and food sector will determine whether or not the U.S. can meet the challenge of satisfying changing consumer demands at home and capturing changing markets abroad.

Mr. Chairman, the U.S. Department of Agriculture has done much to encourage efficient production of agricultural goods. State Departments of Agriculture have spent thousands, perhaps millions of dollars over the years, showing farmers and food producers how to produce more. Little has been done, however, to show farmers how to successfully market their goods. One might argue that it is not the farmer's job to do this; it is the farmer's job to grow and harvest the goods. However, according to a 1987 report sponsored by USDA's Cooperative State Research Service, U.S. farmers consider marketing and agricultural business management to be the most important areas that will produce farm profitability in the future. Farmers must develop and incorporate these skills in every aspect of production.

The record shows that marketing works. At least one poultry farmer has demonstrated that you can go from a small chicken grower to a multi-million dollar corporation producing value-added poultry products by applying sound principles of planning and marketing.

We at St. Joseph's University think it makes business sense. And farming, as you know, is a business. There is a niche for making agriculture more market-oriented. It has not been done before to the extent that it has had a marked effect on farm income and on food producers' income. However, we have been making progress in the Commonwealth of Pennsylvania -- one of the nation's top farm states -- through the efforts of the nationally-recognized food marketing program at St. Joseph's.

Mr. Chairman, St. Joseph's University has demonstrated excellence in the food marketing area. Our Department of Food Marketing, a national leader in food marketing education and the "academic home" of the food industry, is only one of six nationally recognized programs in the United States.

We have worked with the Pennsylvania Department of Agriculture and Pennsylvania farm cooperatives on various educational and cooperative programs. The Pennsylvania Department of Agriculture and various agricultural cooperatives in Pennsylvania supports the proposal we are presenting to the Subcommittee today.

St. Joseph's University proposes to establish a Center for Food Marketing that will use an inter-disciplinary approach to provide education, research, training, cooperative programs and data for students, farmers, farm cooperatives, and food industry leaders from throughout the country. The Center's food marketing expertise will also be available to the USDA for joint programs with farmers and the food industry.

Mr. Chairman, the Center for Food Marketing is also committed to paying particular attention to the needs of farmers. The Center will pursue the specific objectives of helping farmers take steps on their own or in cooperation with other farmers to stimulate demand for their products, gain greater access to consumer markets, and add value to their products before sending them down the food stream.

Specific activities of the Center for Food Marketing will include seminars for farmers, farm cooperatives and businesses on marketing, and product development, cooperative exchange programs between students and food producers to develop strategies for promotion, and educational programs for small and medium-sized producers on dealing with the international marketplace and developing appropriate marketing strategies. We envision the Center becoming a true national resource to farmers and the food industry.

The proposed Center for Food Marketing will be a fully cost-shared project, with the University and private sources contributing $13.6 million for construction of a new, 120,000 square foot facility, out of a total project cost of $25.6 million. St. Joseph's University is requesting that the Federal Government contribute $12 million toward the planning, design, and construction of the Center. The University plans to contribute an additional $10 million in operating costs and for an endowed chair and scholarship program which will greatly enhance the Center's capabilities.

As your Subcommittee has pointed out year after year, the failure of American agriculture to remain competitive in the world marketplace has been costly to the agriculture economy. With an understanding of ever-changing domestic and international markets, American agriculture can remain competitive and strengthen its global position.

Mr. Chairman, I would like to ask that a copy of a formal concept paper on the St. Joseph's Center for Food Marketing be inserted into the record along with my testimony.

Thank you, again, Mr. Chairman, for the opportunity to testify. We appreciate your Subcommittee's consideration of our request.

STATEMENT
BY
THE HONORABLE WILLIAM H. GRAY, III
HOUSE OF REPRESENTATIVES

BEFORE THE
AGRICULTURE APPROPRIATIONS SUBCOMMITTEE
COMMITTEE ON APPROPRIATIONS
HOUSE OF REPRESENTATIVES
WASHINGTON, D.C.
MARCH 28, 1990

Mr. Chairman, I am pleased to introduce to you today, Mr. Daniel Hilferty, Special Assistant to the President of St. Joseph's University in Philadelphia and Dr. Patrick Kirschling, Professor of the St. Joseph's Department of Food Marketing.

Mr. Chairman, since its founding in 1851, St. Joseph's University has been a leader in education and a great asset to Philadelphia. Indeed, St. Joseph's University is an asset to the entire Delaware Valley region.

Mr. Chairman, St. Joseph's is proposing to establish a Center for Food Marketing, designed to benefit farmers, farm cooperatives and small agricultural and food producers in their efforts to successfully market their goods. St. Joseph's proposal is innovative and, I believe, the first of its kind designed to help our farmers and food producers develop the "marketing mentality" they will need to compete both at home and abroad.

Mr. Chairman, your Subcommittee and the U.S. Department of Agriculture have stressed that successful marketing is vital to retention and expansion of markets for U.S. agricultural products. However, little is done each year to help our farmers and food producers market their goods. USDA has encouraged efficient production but has done little to emphasize effective promotion.

Mr. Chairman, the St. Joseph's program in food marketing is the foremost of its kind in the nation. The proposal being made to you today will allow St. Joseph's to expand its current program into a Center for Food Marketing which will become a true national resource to farmers and the food industry. I believe it is an idea which is both timely and worthy of USDA funding.

I appreciate your granting St. Joseph's the opportunity to testify before you today, and I would like to turn it over to Mr. Hilferty.

ST. JOSEPH'S UNIVERSITY

CENTER FOR FOOD MARKETING AT THE INSTITUTE FOR INTERNATIONAL TRADE, DIPLOMACY AND DEVELOPMENT

CONCEPT PAPER

U.S. AGRICULTURE - BACKGROUND AND CHALLENGES

Food and agriculture are America's biggest business. There are more Americans involved in the planting, harvesting, transporting, processing, marketing, selling and exporting of agricultural products than in any other industry. Agriculture is also the nation's number one dollar earner in world trade. Agriculture is a key component -- if not the key component -- for a viable U.S. economy.

Despite its strengths, America's total agriculture system is and will continue to be faced with many critical problems. U.S. agriculture and world agricultural markets currently stand at a crossroads. Commodity growth and increased commodity prices of the 1970's have given way to a period of extreme volatility, with years of surpluses and low prices followed by years of shortages and increased prices. During the past decade, farms have failed, agriculture and food exports have declined overall, and U.S. agriculture has lost traditional overseas markets to competitors. Growing integration of the world economy, historic changes in East-West relations, and the emergence of developing countries in world agricultural trade pose significant challenges to U.S. agriculture and food policies.

U.S. AGRICULTURE AND THE GLOBAL CHALLENGE

As the House Agriculture Appropriations Subcommittee Report for Fiscal Year 1990 pointed out, the failure of American agriculture to remain competitive in the world marketplace has been costly to the agricultural economy. Understanding and managing the changing world agricultural economy rank among the major challenges facing U.S. agriculture in the effort to remain competitive. With such an understanding, American agriculture can strengthen its global position.

All the U.S. prospers from a strong and healthy agriculture. By assessing changes taking place, developing new strategies to respond to dynamic market forces, and adopting a "global" perspective, U.S. producers can remain competitive in the marketplace.

THE MARKETING ADVANTAGE

The U.S. Department of Agriculture's 1988 Yearbook of Agriculture stressed that successful marketing is vital to the retention and expansion of markets for U.S. agricultural goods. The ability to produce agricultural goods efficiently is not enough. Producers must be aware of the desires of consumers who buy those goods and recognize how qualities can be tailored to demand, coordinating production decisions with marketing decisions and change. Since individual farmers do not retain ownership of commodities through the marketing process, they are often not directly involved in promoting their products. They should be. The marketing efforts of the agricultural/food sectors will determine whether or not the U.S. can meet the challenge of satisfying changing consumer demand at home and capturing changing markets abroad.

Farmers and food producers have been educated to be production oriented. In fact, U.S. farm policies have encouraged overproduction. Farmers and food producers cannot simply be production oriented, however, and survive in today's agricultural environment. They must understand and employ marketing and financial management strategies to grow. While some farm cooperatives have successfully adopted appropriate marketing strategies, such as value added marketing, most cooperatives have not. Many farm groups are placing increasing priority on finding new uses for their products and are increasingly aware of the need for new marketing tools.

As agricultural and food industries become more market oriented, farmers and cooperatives will have to adopt strategies to succeed. A report sponsored by USDA's Cooperative State Research Service in 1987 highlighted the need for such a marketing "mentality," and issued the following recommendations:

1) Future agriculture research should be directed toward achieving cutting edge competitiveness for U.S. agricultural commodities and food products.

2) Consumption patterns (diets) are changing. Research emphasis should focus on domestic and international consumer preferences for agricultural commodities and food products.

3) U.S. farmers consider marketing, finance and agricultural business management to be the most important areas that will produce farm profitability in the future. Farmers must develop and incorporate these skills in every aspect of production.

4) Research, teaching, extension and research communications by universities and government must change to meet present and future challenges in agriculture.

ST. JOSEPH'S UNIVERSITY - MEETING THE CHALLENGE

To meet the challenges facing U.S. agriculture, St. Joseph's University plans to establish a Center for Food Marketing at the Institute for International Trade, Diplomacy and Development. The Center for Food Marketing will broaden the scope of the University's Department of Food Marketing. Founded in 1962 and supported entirely by industry, the Department of Food Marketing is the largest academic program in the U.S. dedicated to preparing students for management careers in the food and allied industries.

Problems of U.S. agriculture cannot be considered the province of one field of expertise. Understanding these problems requires both an interdisciplinary approach and the practical experience of qualified persons in business, labor, and agriculture.

The Center for Food Marketing will combine these disciplines to provide education, research, training, cooperative programs and data for students, farmers/food producers, food industry leaders and state and Federal government policy makers. The Center will approach marketing in the best and broadest sense, developing programs and curriculum -- in conjunction with the Department of Food Marketing and St. Joseph's School of Business and Administration -- with a business enterprise orientation for U.S. agriculture and food industry studies.

CENTER FOR FOOD MARKETING - ACTIVITIES

Specific activities of the Center will include seminars for farmers, farm cooperatives and businesses on value added product development and marketing; educational programs for small- and medium-sized food producers on marketing, financial management and product development; cooperative ("co-op") exchange programs between St. Joseph's students and farmers, farm cooperatives and businesses on marketing strategy development; educational programs for small- and medium-sized producers on international marketing strategies; and symposia for all segments of the agriculture/food industry on business development, trade and the global agricultural economy.

The Center will expand upon the Department of Food Marketing's innovative and successful "Challenge Course" Program. In the Program, food companies and agricultural cooperatives challenge food marketing students to find solutions to particular marketing problems. The Program provides students with practical experience and provides sponsoring companies and coops with marketing and promotion solutions at minimal cost. Through the Challenge Course Program, companies and cooperatives have the opportunity to explore areas which they might not otherwise investigate due to time constraints or cost. Challenge Courses have also been used as "brainstorming" vehicles before sponsoring companies take

formalized marketing steps. The Department of Food Marketing has offered several successful Challenge Courses. In Spring, 1989, the Department offered a communications Challenge Course sponsored by the Pennsylvania Department of Agriculture. This year, the Department is offering a course sponsored by the Pennsylvania Dairy Farmers Cooperative.

In addition, the Center for Food Marketingat the Institute for International Trade, Diplomacy and Development will offer seminar/consulting projects for small- to medium-sized agricultural businesses on marketing and business development. While smaller businesses have expertise in food production, processing and logistics, many of their executives have not had significant education in marketing. As a result, those businesses have not been able to keep current with market trends or methods of producing value-added goods.

The Center's seminar/consulting projects will first instruct participating companies in the basic planning and strategy principles of food marketing. Companies will then participate in a series of individual consulting meetings designed to assist and encourage participants to follow up on developing their own comprehensive plans. St. Joseph's Department of Food Marketing will provide participating companies with a student worker to perform research and competitive analyses. Each company will be assigned a departmental faculty member to guide the planning process and assist in strategy development. The Center will organize follow-up seminars to discuss the results.

Finally, the Center for Food Marketing will provide an on-line market data bank of updated market conditions and consumer information to assist small- and medium-sized producers in marketing and production decisions.

CENTER FOR FOOD MARKETING -- A MULTI-DISCIPLINARY APPROACH

The Center's multi-disciplinary approach will help farmers and food producers in three important ways. First, the approach will allow farmers and food producers to work more closely with other segments of the agriculture/food industry to influence as much as possible external factors affecting operational decisions. Second, the approach will provide farmers and food producers with the business and marketing skills needed to successfully promote their products, as well as provide them with a broader -- and vital -- understanding of the market forces that will shape their industry. Third, the approach will permit smaller farmers and food producers, in particular, to develop beneficial relationships with business and food industry leaders.

St. Joseph's University believes that it is important to bring the most current marketing approaches to the nation's agriculture and food industry. While increased production is an important goal, U.S. farmers, farm cooperatives and small businesses must also have as a goal successful promotion of their goods through every stage of production. Without effective promotion, the benefits of efficient production cannot be realized.

CENTER FOR FOOD MARKETING -- A SPECIAL FOCUS ON FARMERS

The Center for Food Marketing is also committed to paying particular attention to the needs of farmers. The Center will pursue the specific objectives of helping farmers take steps on their own or in cooperation with other farmers to stimulate demand for their products, gain greater access to consumer markets, and add value to their products before sending them down the food stream.

ST. JOSEPH'S UNIVERSITY - UNIQUELY QUALIFIED

St. Joseph's University is uniquely qualified to house the Center for Food Marketing at the Institute for International Trade, Diplomacy and Development. St. Joseph's Department of Food Marketing is the national leader in food marketing education and the "academic home" of the food industry. The curriculum provides background in the entire scope of the food industry, from farm to table. The Department conducts an ongoing series of food industry research projects, executive seminars and lectures, and internships and cooperative educational programs between students, the Commonwealth of Pennsylvania, and Pennsylvania farmers and farm cooperatives. Its library is considered the finest depository of food marketing information in the country. Through its partnership with industry and agriculture, the Department has developed extensive networks capable of supporting and sustaining a Center for Food Marketing.

St. Joseph's School of Business and Administration and Institute for International Trade, Diplomacy and Development at St. Joseph's University will enhance the Center for Food Marketing in its work by providing an additional, global perspective. Collaborative research and education among the three entities will explore the evolving world economy and future implications for U.S. agricultural trade. Growing global interdependence, the emergence of developing countries in world trade, changes in Eastern Europe, and a potential role for U.S. farmers in the agricultural trade debate are issues to be explored.

REQUEST FOR FEDERAL CONTRIBUTION

The proposed Center for Food Marketing at the Institue for International Trade, Diplomacy and Development will be a fully cost-shared project, with the University and private sources contributing $13.6 million for construction of a new, 12,000 square foot facility, out of a total project cost of $25.6 million. St. Joseph's

University is requesting that the Federal Government contribute $12.4 million toward the planning, design, and construction of the Center. The University plans to contribute an additional $10 million in operating costs and for an endowed chair and scholarship program which will greatly enhance the Center's capabilities.

7

BUDGET

ST. JOSEPH'S UNIVERSITY
CENTER FOR FOOD MARKETING
AT THE INSTITUTE FOR INTERNATIONAL
TRADE, DIPLOMACY AND DEVELOPMENT

(120,000 Square Foot Facility at $155.00 per/square foot)

Planning, Design, Site Preparation	$ 2,000,000
Construction (including mechanical, electrical and landscape)	$ 18,600,000
Equipment	$ 3,000,000
Land Acquisition	$ 2,000,000
TOTAL	$ 25,600,000
University/Private Contribution	$ 13,600,000
Requested Federal Contribution	$ 12,000,000

ST. JOSEPH'S UNIVERSITY

DEPARTMENT OF FOOD MARKETING

St. Joseph's University's Department of Food Marketing in the College of Business and Administration is the only wholly-industry-supported academic program of its kind in the U.S. and just one of six nationally recognized programs related to the food and agriculture industry. As mentioned earlier, the Department of Food Marketing conducts food industry research projects, executive seminars, internships and cooperative educational programs between students, the Commonwealth of Pennsylvania, Pennsylvania farmers and farm cooperatives.

The Department is the largest in the University, with 500 students. Marketing and Food Marketing majors account for fully twenty percent of the undergraduate population. Over 1500 students have graduated from the Food Marketing program and gone on to careers in the food industry.

St. Joseph's has established strong industry ties which support the Food Marketing program in placement of graduating seniors, academic programming, and scholarship support. A unique Board of Governors made up of chief executive officers and senior executives from industry provide direction, counsel, planning and financial support to the Food Marketing program. The Campbell Library on St. Joseph's campus is one of the largest depositories of food and food marketing information in the East.

One of the key dimensions of business education in the 1990's will be globalization. The Department of Food Marketing has aggressively sought and implemented international programs, providing a wide range of opportunities for students and industry alike. These opportunities include international marketing study tours; faculty exchange programs between St. Joseph's and University College, Cork, Ireland; and international food marketing strategy seminars, educational programs and cooperative agreements with industry groups in West Germany, the Dominican Republic and Puerto Rico. The Department plans to expand its partnerships with institutions in Central and South America. All of these opportunities are designed to both prepare students for careers in a business world that is truly international in scope and to "build bridges" with new cultures and economies.

Through its successful academic programming and unique partnership with industry and agriculture, the Department has developed extensive networks capable of supporting and sustaining the proposed Center for Food Marketing.

ST. JOSEPH'S UNIVERSITY

INSTITUTE FOR INTERNATIONAL TRADE, DIPLOMACY AND DEVELOPMENT

The Center for Food Marketing will be further supported by the Institute for International Trade, Diplomacy and Development at St. Joseph's University. Recently established to provide the entire University a strong international focus, the Institute will add an additional, global perspective to the Center for Food Marketing's program. The Institute's objectives include working to enhance the international awareness and competitiveness of the Delaware Valley region, Pennsylvania and the nation; organizing regional, national and international seminars and conferences for key leaders and groups on the problems, opportunities, and challenges of the changing world environment; and attracting scholars to conduct high quality research.

The inaugural project of the Institute was a conference on "Europe and America: 1992" (May 22-23, 1989), planned in conjunction with the Pennsylvania Department of Commerce. In October, 1989, the Institute sponsored a seminar on "The Tianamen Effect: The Future of U.S. Trade with and Investment in China." A second conference in January 1990 was devoted to the U.S.-Canada Free Trade Agreement.

The Institute -- in conjunction with the proposed Center for Food Marketing, the Department of Food Marketing and the College of Business and Administration -- plans to undertake a program of multi-disciplinary research and annual seminar workshops to explore the complex problems of an evolving world agricultural economy. Emphasis will be on the implications of world economic change and the challenges facing U.S. agriculture and food policies, and on U.S. agricultural competitiveness abroad.

The Pennsylvania State Legislature last year appropriated $156,000 for St. Joseph's University for future Institute programs.

ST. JOSEPH'S UNIVERSITY

Founded in 1851, St. Joseph's University is an independent, Catholic, Jesuit University dedicated to liberal education. Faithful to the Jesuit tradition, St. Joseph's strives for excellence and balance in its academic programs and proclaims sound and vigorous teaching as its central duty. The University encourages innovative educational programs aimed at improving the quality of life both in the local and global community.

The University's divisions and programs include the College of Arts and Sciences, the College of Business and Administration, the University College, and the Graduate Programs. St. Joseph's was recognized as a university by the Secretary of Education of the State of Pennsylvania in 1978.

St. Joseph's University is Philadelphia's Jesuit University and enjoys unique educational opportunities deriving from its vital relationship to the urban community. St. Joseph's President, Nicholas S. Rashford, S.J., currently chairs the Delaware River Port Authority.

WEDNESDAY, MARCH 28, 1990.

ARS RESEARCH UNIT—UNIVERSITY OF NEBRASKA

WITNESS

DR. DARRELL W. NELSON, UNIVERSITY OF NEBRASKA—LINCOLN

Mr. WHITTEN. Doctor Darrell W. Nelson from the University of Nebraska at Lincoln will be our next witness.

Mrs. SMITH. Mr. Chairman, may I extend a special welcome to Doctor Nelson, also. Let me say that Doctor Nelson is not only representing the interests of the University of Nebraska, but the regional interest in this whole issue.

Thank you for coming, Doctor Nelson.

Dr. NELSON. Thank you.

Mr. WHITTEN. Thank you, very much. We are glad to hear from you.

Dr. NELSON. Mr. Chairman and members of the committee, I appreciate the opportunity to present testimony on behalf of the State agricultural experiment stations in the northern and central Great Plains in support of earmarking a portion of the ARS budget for the ARS Wheat, Sorghum, and Forage Research Unit located at the University of Nebraska at Lincoln. This Research Unit, consisting of 11 scientists and support staff, serves the Northern and Central Great Plains and the nation by developing improved hard red winter wheat grain sorghum, and perennial grass germplasm and varieties; determining the physiological basis for environmental stress tolerance in grain sorghum; solving viral disease problems in wheat; and developing integrated weed control strategies for grasslands, including land in the conservation reserve program.

This unit is also responsible for managing the international winter wheat performance nursery and the regional hard red winter wheat nurseries in the Great Plains. These activities provide essential information on how wheat germ plasm and cultivars perform throughout the Great Plains and in wheat-producing regions of the world.

These research programs have been highly successful in improving the efficiency of agricultural production in the Great Plains. The ARS wheat breeders, working collaboratively with University of Nebraska scientists, have developed more than 25 new wheat cultivars in the last 40 years. These cultivars are high yielding, resistant to important diseases and insects, and have excellent milling and baking qualities.

Cultivars jointly developed by the ARS and the University of Nebraska are planted on 85 percent of Nebraska wheat acreage and on large acreages in other Great Plain States. These cultivars add more than $100 million per year to the income of Nebraska farmers. In addition, germplasms developed by the joint Federal/State team is widely used as breeding material in other public and private wheat variety improvement programs in the Great Plains.

In the United States there is little effort directed at improving the quality of perennial forage grasses; however, the ARS program at Lincoln is very unique in that the major breeding effort is directed at improving the digestibility of native warm-season grasses.

Through breeding, this program has developed switchgrass cultivars with improved digestibility for ruminant livestock. Cattle grazing on one new switchgrass cultivar gained 40 percent more weight as compared to animals grazing the most widely-grown cultivar.

Significant improvement in digestibility and cattle weight gain have also been obtained from breeding efforts on big bluestem, indiangrass, bromegrass, and the wheatgrasses. This research will have major impact on the efficiency of cattle production in Nebraska and the Great Plains.

In recent years the ARS Plant Science Research Unit at Lincoln has been severely under-funded. The lack of adequate operating funds has already had a large negative effect upon this research effort. In order to provide sufficient operating funds for existing scientists, three research projects in the Wheat, Sorghum, and Forage Unit have recently been dropped. These projects that were eliminated were sorghum entomology, forage sorghum breeding and genetics, and forage entomology. The funds from these projects were redistributed to the remaining plant science projects. Even so, the funding level for these remaining programs is still inadequate.

If additional funding is not available, the Wheat, Sorghum, and Forage Research Unit will be required to further reduce its program. The next activity to be dropped is the international winter wheat performance nursery. Elimination of this program will have a major impact on the availability of germplasm and information about germplasm performance to wheat breeders around the world, as well as American wheat breeders. The National Wheat Improvement Committee has strongly endorsed maintaining this important activity.

Research plans to improve the intrinsic value of wheat, sorghum, and grasslands of Nebraska and in adjacent States and to reduce losses due to weeds, diseases, and drought and soil stress factors have been developed by the Research Unit. These research plans can be implemented by scientists of the ARS Wheat, Sorghum, and Forage Research Unit if adequate funding for operating expenses is provided. No additional staff or USDA facilities are needed.

The additional funding requirement is $650,000 per year for a five-year period. We request that $1,981,433 of the ARS appropriation for fiscal year 1991 be earmarked for the Wheat, Sorghum, and Forage Research Unit at Lincoln. This amount is comprised of $1,331,433 in the fiscal year 1990 ARS budget plus $650,000 of additional funds.

I appreciate the opportunity to present these issues and recommendations for your consideration on behalf of the State agricultural experiment stations in the Great Plains. I would be pleased to respond to any questions that you may have.

Mr. WHITTEN. Thank you very much. We appreciate your appearance here and appreciate these problems. As I have said earlier, we will do the best we can.

Dr. NELSON. Thank you very much.

Mrs. SMITH. Thank you. We appreciate it.

[Dr. Nelson's prepared statement follows:]

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TESTIMONY

Presented to

The Subcommittee on Rural Development,
Agriculture, and Related Agencies

House Committee on Appropriations

on Behalf of

The Nebraska Agricultural Experiment Station

by

Dr. Darrell W. Nelson
Dean for Agricultural Research and
Director, Nebraska Agricultural Experiment Station
University of Nebraska, Lincoln, NE

March 28, 1990

Mr. Chairman, my name is Darrell W. Nelson, Dean for Agricultural Research and Director of the Nebraska Agricultural Experiment Station at the University of Nebraska. I appreciate the opportunity to present testimony on behalf of the state agricultural experiment stations in the northern Great Plains.

The Agricultural Research Service (ARS), U.S. Department of Agriculture, has the mission of conducting fundamental and problem-solving research in agriculture and related areas that has regional and/or national significance. For many years, the ARS has done an admirable job of carrying out its responsibilities. ARS research has been particularly important to low-population, agriculturally-intensive regions of the U.S. where state resources are insufficient to address all of the significant agricultural production problems. The ARS has formed strong partnerships with state agricultural experiment stations to attack difficult problems in a coordinated manner, thus, ensuring that the most efficient use is made of the limited agricultural research funds.

I am testifying in support of earmarking a portion of the ARS budget for the ARS Wheat, Sorghum, and Forage Research Unit located at the University of Nebraska in Lincoln. This Research Unit, consisting of eleven scientists and support staff, serves the northern and central Great Plains and the nation by: (i) developing improved hard red winter wheat, grain sorghum, and perennial forage grass germplasm, (ii) determining the physiological basis for environmental stress tolerance in grain sorghum, (iii) solving viral disease problems in wheat, and (iv) developing integrated weed control strategies for grasslands including land in the Conservation Reserve Program. This Unit is also responsible for managing the International Winter Wheat Performance Nursery and the Regional Hard Red Winter Wheat Nurseries. These activities provide essential information on how wheat germplasm and cultivars perform throughout the Great Plains and in wheat producing regions of the world.

These research programs have been highly successful in improving the efficiency of agricultural production in the Great Plains. The ARS wheat breeders working collaboratively with University of Nebraska scientists have developed more than 25 new wheat cultivars in the last 40 years. These cultivars are high yielding, resistant to important diseases and insects, and have excellent milling and baking qualities. Cultivars developed by the joint ARS-University of Nebraska program are planted on 85% of Nebraska wheat acres and on large acreages in the Great Plains states. These cultivars add more than $100 million per year to the income of Nebraska farmers. In addition, germplasms developed by the joint federal-state team is used widely as breeding material in both public and private wheat variety improvement programs in the Great Plains.

In the United States, there is little effort currently directed at improving perennial forage grasses by either the public or private plant breeders. The ARS plant science group at the University of Nebraska is unique because major efforts are

being directed at improving the quality of native warm season grasses. Through breeding, this program has developed switchgrass cultivars with improved digestibility for ruminant livestock. Cattle grazing one new switchgrass cultivar gained 40% more weight as compared to animals grazing the most widely grown cultivar. Significant improvement in digestibility and cattle weight gain have also been obtained from breeding efforts on big bluestem, indiangrass, bromegrass, and the wheatgrasses. This research will have major impact on the efficiency of cattle production in Nebraska and the northern Great Plains.

The grain sorghum physiology and breeding programs have concentrated efforts on identifying genes that regulate drought, heat, cold, and nutrient deficiency tolerance. The aim of these programs is to better understand genetic control of plant tolerance to environmental stresses and to develop improved germplasm that private sorghum breeders can incorporated into commercial hybrids. Their efforts have resulted in a steady release of grain sorghum populations which contain desirable traits. The populations and derived inbreds are widely used by the sorghum seed industry. Furthermore, the ARS physiologists working closely with University of Nebraska scientists have developed a center of expertise in sorghum physiology that enjoys international stature for research and graduate student training.

In recent years, ARS plant science research at Lincoln has been severely underfunded. The lack of adequate operating funds has already had a large negative effect on the ARS research effort at Lincoln. In order to provide sufficient operating funds for existing scientists, three research projects in the Wheat, Sorghum, and Forage Unit were dropped in the last three years when the scientists assigned to these projects were transferred or retired. The projects that were dropped were sorghum entomology, forage sorghum breeding and genetics, and forage entomology. The funds from these projects were redistributed to the remaining plant science projects.

The ARS funding for the plant science projects at Lincoln is still marginal even after dropping three projects. The ARS national rule-of-thumb for minimum to adequate annual finding is $200,000 per scientists for scientists located at ARS facilities such as the Meat Animal Research Center at Clay Center, NE and $150,000 for scientists at university locations such as Lincoln. Before the Gramm-Rudman-Hollings budget reduction went into effect this fiscal year, the average funding per scientist was $123,000 per permanent scientist in the Wheat, Sorghum and Forage Research Unit. As a result of the Gramm-Rudman-Hollings reductions, operating funds were reduced by $71,000. Their funding is now more than $30,000 per scientists below what is considered to be minimal. Furthermore, funding for the forage and range group is $30,000 to $70,000 per scientist per year below similar groups in other parts of the United States. The Wheat, Sorghum, and Forage Unit needs over $650,000 in additional funds to adequately carry out its' responsibilities.

If additional funding is not available, the Wheat, Sorghum and Forage Research Unit will be required to further reduce its' programs. The next activity to be dropped is the International Winter Wheat Performance Nursery. Elimination of this program will have a major impact on the availability to wheat breeders of germplasm from around the world and information on the performance of U.S. cultivars in other wheat growing regions of the world will not be available. The National Wheat Improvement Committee has strongly endorsed maintaining this important activity.

Research plans to improve the intrinsic value of wheat, sorghum, and grasslands of Nebraska and adjacent states and to reduce loses due to weeds, diseases, and drought and soil stress factors have been developed by the Research Unit. These research plans can be implemented by scientists of the ARS Wheat, Sorghum, and Forage Research Unit if adequate funding for operating expenses is provided. No additional staff or U.S.D.A. facilities are needed. The additional funding requirement is $650,000 per year for a five-year period. We request the $1,981,433 of the ARS appropriation for FY 91 be earmarked for the Wheat, Sorghum, and Forage Research Unit at Lincoln. This amount is comprised of $1,331,433 in the FY 90 ARS budget plus $650,000 of additional funds.

I appreciate the opportunity to present these issues and recommendations for your consideration on behalf of the state agricultural experiment stations in the Great Plains. I would be pleased to respond to any questions

WEDNESDAY, MARCH 28, 1990.

RESEARCH AT EPSCOR STATES

WITNESSES

DR. JOHN R. CAMPBELL, COALITION OF EPSCOR STATES
H. STEWART VAN SCOYOC, COALITION OF EPSCOR STATES

Mr. WHITTEN. Next we will hear from Doctor John R. Campbell. We are glad to hear from you. Your full statement will appear in the record immediately following this presentation. Touch on the highlights if you would like.

Dr. CAMPBELL. Thank you, Mr. Chairman and members of the committee. It is a delight to be here today, and I appreciate the opportunity.

I am John Campbell, President of Oklahoma State University, accompanied by Stewart VanScoyoc, Director of our Washington Office of the Coalition for EPSCOR States. The EPSCOR States include Mississippi, Oklahoma, Kentucky, and 13 other States. These are States that have been identified as States that are not getting, if I may use the word, their "fair share" of the competitive grants.

Chart one shows the EPSCOR States with 13 percent of the U.S. population receiving only 5.6 percent of the competitive Federal grant monies. On the other hand, the top 5 States that represent 28 percent of the population receive 44.5 percent of the Federal R&D dollars as a percent of the total.

The concept behind the EPSCOR States is to help develop. I should say that EPSCOR stands for Experimental Program to Stimulate Competitive Research. I think the concept is good. It was put in place some ten years ago by the National Science Foundation, and the Coalition for the EPSCOR States, which was formed a year or so ago and which I represent today, has been encouraging other agencies of the Federal Government to adopt this same type of an arrangement whereby a certain amount of Federal dollars would be put aside and devoted toward helping develop the research infrastructure and the competitiveness of the researchers in these EPSCOR States.

Today I am here to support the Department of Agriculture's request that we include strengthening grants with the national initiative, which is a new initiative for research on agriculture, food, and environment. But I am not sure that they have made provisions to include what I think is a fair share for the 16 EPSCOR States, as well as Puerto Rico.

I am here, sir, to recommend to this committee that you consider the possibility of—if you support this program for the Department of Agriculture, which I support, that we have identified and given a recommendation in our full written paper—a larger proportion of the total, which is a $100 million program recommended for fiscal year 1990, to be set aside or committed to research programs in the EPSCOR States.

I think that this concept is real good. It is to stimulate and develop the infrastructure of the research programs. At the same time, these States need this because their research has not been ade-

quate to develop the new research and technologies that will feed the economy.

On chart three we show the percent of the R&D money provided by the Federal Government that goes into these states—44 percent versus 60 percent for the total in the U.S., and 70 percent for the high-five States.

The economy reflects this so that, as shown on chart two, the per capita income of the EPSCOR States is only 80 percent of national average. So, as you can see, there is a relationship between the research productivity, which is fueled by the Federal dollars going in to support research, and the economy that is in response to that.

Mr. WHITTEN. We appreciate your problem in this subcommittee. We all have our problems. We have a nation with a $3 trillion debt and the President, as chief of the country, has asked for a $30 billion reduction and a $1,400,000,000 reduction in agriculture. So you can see what we are up against.

I just came from a meeting of the Rules Committee where the point was made that we are still running a deficit. We all agree that you can't keep spending and not paying. But something has got to give. We have got to keep essential services going, whatever happens, and find some way to pay for it. In the first place, we have let everything under the sun come in here from abroad in competition with domestic producers. I don't think you can live with that forever. I think our balance sheet shows, as a nation, we are not doing well.

But we do appreciate your statement and your subject. We'll do the best we can. That's all we can do.

Dr. CAMPBELL. We appreciate that, Mr. Chairman.

Mr. WHITTEN. Thank you very much.

Mr. WATKINS. Mr. Chairman?

Mr. WHITTEN. Mr. Watkins?

Mr. WATKINS. Dr. Campbell represents my alma mater, Oklahoma State University.

Mr. WHITTEN. You mean they turned out two good men?

Mr. WATKINS. I know you have to be at the Energy and Water Subcommittee at 2:00. I just wanted to say we appreciate your coming. I know you will be back here to testify again, so I will reserve any further remarks until that time.

Mr. WHITTEN. Mr. Watkins does a good job here.

Thank you very much.

Mr. WATKINS. I appreciate that, Mr. Chairman.

Dr. CAMPBELL. Thank you, Mr. Chairman.

Mr. WHITTEN. Thank you.

[Dr. Campbell's prepared statement follows:]

Statement of Dr. John R. Campbell
On Behalf of the Coalition of EPSCoR States
Accompanied by Mr. H. Stewart VanScoyoc

Before the House Subcommittee on Rural Development,
Agriculture and Related Agencies
Committee on Appropriations
March 28, 1990

INTRODUCTION.

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity you have given us to testify before you this afternoon. I am President of Oklahoma State University and today I am accompanied by Mr. H. Stewart VanScoyoc.

We are here as representatives of the Coalition of EPSCoR States. This Coalition was formed approximately one year ago to work in support of the concepts embodied in the National Science Foundation's Experimental Program to Stimulate Competitive Research (EPSCoR).

The National Science Foundation established EPSCoR in 1979 for the purpose of developing the capacity of scientists and institutions in eligible states to compete more successfully for Federal research funding from NSF and other Federal agencies. The EPSCoR approach involves a coordinated state-wide planning effort, designed to identify programs which will facilitate the creation of pockets of research excellence within each state. Since 1979, 16 states and Puerto Rico* have been designated by NSF as eligible for participation.

*Mississippi, Oklahoma, Kentucky, Alabama, Arkansas, Idaho, Louisiana, Maine, Montana, Nevada, North Dakota, Puerto Rico, South Carolina, South Dakota, Vermont, West Virginia and Wyoming.

The Coalition was formed to increase awareness of the EPSCoR program, to secure additional funding for it at NSF, and to encourage other agencies and departments of the Federal government to adopt complimentary initiatives. Our purpose here today is to support, with some suggestions for modification, the Department of Agriculture's efforts to include research strengthening grants within the National Initiative for Research on Agriculture, Food and Environment.

II. Characteristics of the EPSCoR States.

Presently, Federal research funding is concentrated in relatively few states and regions of the nation. As you can see from Chart I, the 16 EPSCoR states and Puerto Rico, while containing 13% of the United States population, receive only 5.6% of Federal research and development dollars. In contrast, the top five research states, with 27.9% of the population, receive 44.5% of Federal research and development dollars. It is not surprising, therefore, -- in fact it may be related, -- that the EPSCoR states tend to have a per capita income that is lower than the national average and substantially lower than the top five research states. This is shown in Chart II.

The EPSCoR experiment, while funded at only one-quarter of one percent of the NSF budget, was designed as a first step in addressing this disparity. As detailed in our written submission, the EPSCoR approach involves the establishment of a state-wide coordinating mechanism to:

-- Identify state and institutional barriers to competitive research

-- Develop a comprehensive improvement plan supported by state and institutional resources.

-- Undertake a merit review of all EPSCoR programs and;

-- Implement the improvement plan focusing on infrastructure improvement, research enhancements and human resource development.

The result has been a significant improvement in state support for research and development in the EPSCoR states. As you can see from Charts III and IV, Federal support as a percent of total spending for research and development at our research universities continues to lag significantly behind both the national average for Federal support and the percentage of support provided to the top five states. On the other hand, state support in the EPSCoR states is twice the national average and over seven times as great on a percentage basis as it is in the state that receives the greatest amount of Federal support.

III. The National Initiative for Research on Agriculture, Food and Environment.

As part of its budget request of this Committee, the Department of Agriculture has requested $100 million in FY '91 for the National Initiative for Research on Agriculture, Food and Environment (the "Initiative"). This represents a second step toward an overall $500 million program as recommended by the National Academy of Sciences.

We are well aware of the controversy surrounding this Initiative, particularly as it relates to the ability of

institutions in EPSCoR states to successfully compete. It is our purpose before this Committee today to urge your support for efforts to assure that EPSCoR states are not left out of this Initiative as it moves forward. Absent a specific program to assure improvement in our ability to compete, history would indicate that the majority of funds will once again find their way into a small number of states with established, largely Federally funded, scientific infrastructures.

We are pleased to see that the Department of Agriculture has set aside 10% of the funds in this program for "research strengthening grants". We are concerned, however, that this amount is not sufficient. Additionally, we are concerned that the program for achieving the maximum improvement in competitiveness possible from these grants needs to be more fully defined.

Therefore, we would suggest the following guidelines for a program to assure reasonable geographic distribution in the awarding of Initiative grants:

1. Ten percent of the funds in FY 91 should be set aside for planning grants and infrastructure improvement in EPSCoR States. By coordinating with the State EPSCoR mechanisms already in place, this would assure that this funding is integrated with the overall development of the scientific enterprise within these states. The purpose of this infrastructure improvement would be to increase the number and quality of grant applications submitted by EPSCoR states.

2. A goal should be established to have 20% of the actual research grant awards made to EPSCoR states. If the number of high quality research proposals submitted from EPSCoR states is not sufficient to reach this goal, the Department of Agriculture could so report

annually to the Congress, together with their suggestions for additional infrastructure improvements to allow that goal to be reached.

IV. Conclusion.

In 1979, NSF, faced with a requirement in its charter that it "avoid undue concentrations of research" initiated EPSCoR in an effort to broaden the distribution of its research funds. As developed over the last decade by NSF, this state-based model has proven effective; two out of the last three engineering research centers awarded by the Foundation went to institutions in EPSCoR states--one to your own state of Mississippi, Mr. Chairman.

We in the Coalition believe that this proven model should be extended to other departments that fund research, including the Department of Agriculture. We do not hold this view alone. In several Congressional hearings, most recently before the Senate Budget Committee, Presidential Science Advisor Dr. D. Allan Bromley has commented favorably on this notion. In addition, the National Association of State Universities and Land-Grant Colleges (NASULGC) has adopted a resolution specifically advocating extension of the EPSCoR model. Our proposal here today is a start in this direction, and we hope that the Committee will give it favorable consideration.

Thank you very much for allowing us this opportunity to testify. We are happy to answer any questions you might have.

Chart I

COMPARISON OF POPULATION AND FEDERAL R & D $$ AS PER CENT OF THE U.S. TOTAL

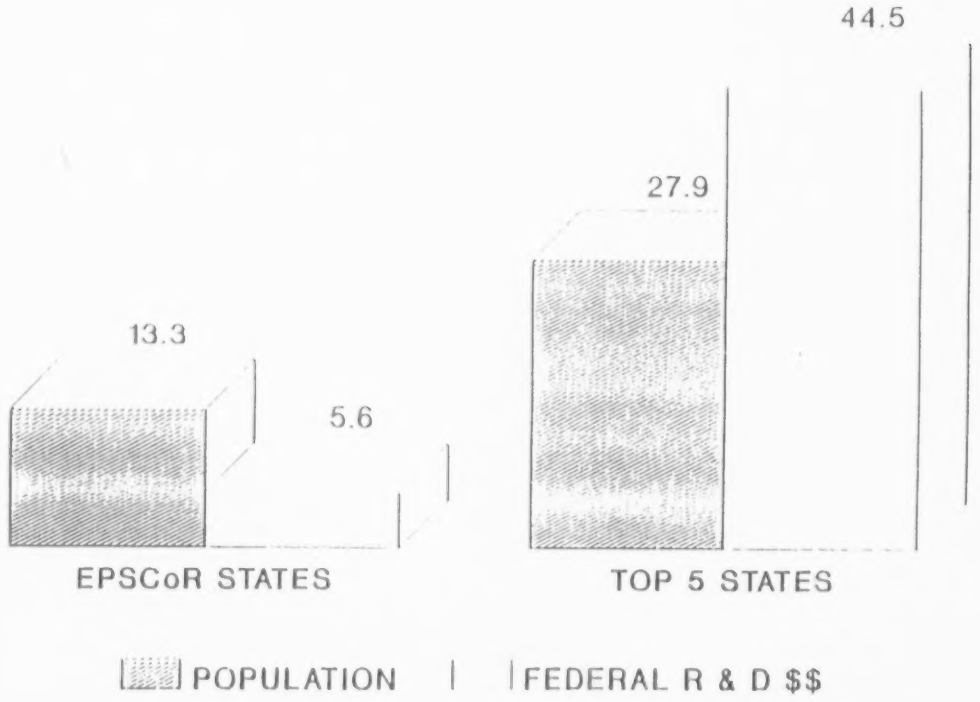


Chart II

PER CAPITA INCOME, 1988
PER CENT OF NATIONAL AVERAGE

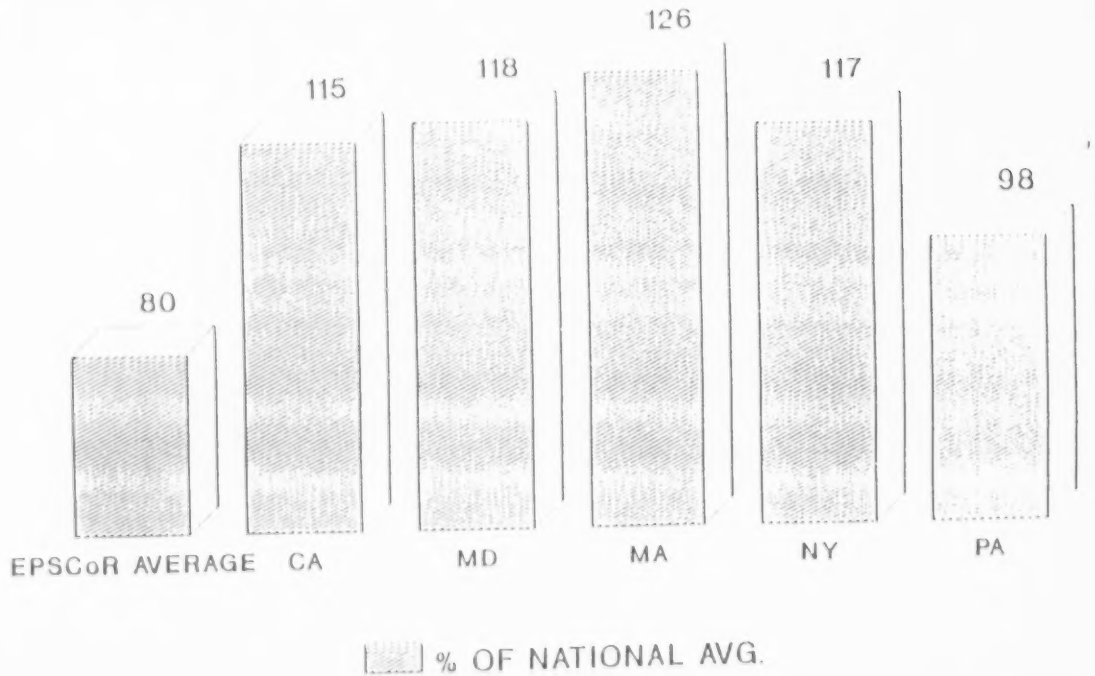


Chart III

PER CENT OF TOTAL 1988 R & D SPENDING PROVIDED BY FEDERAL GOVERNMENT

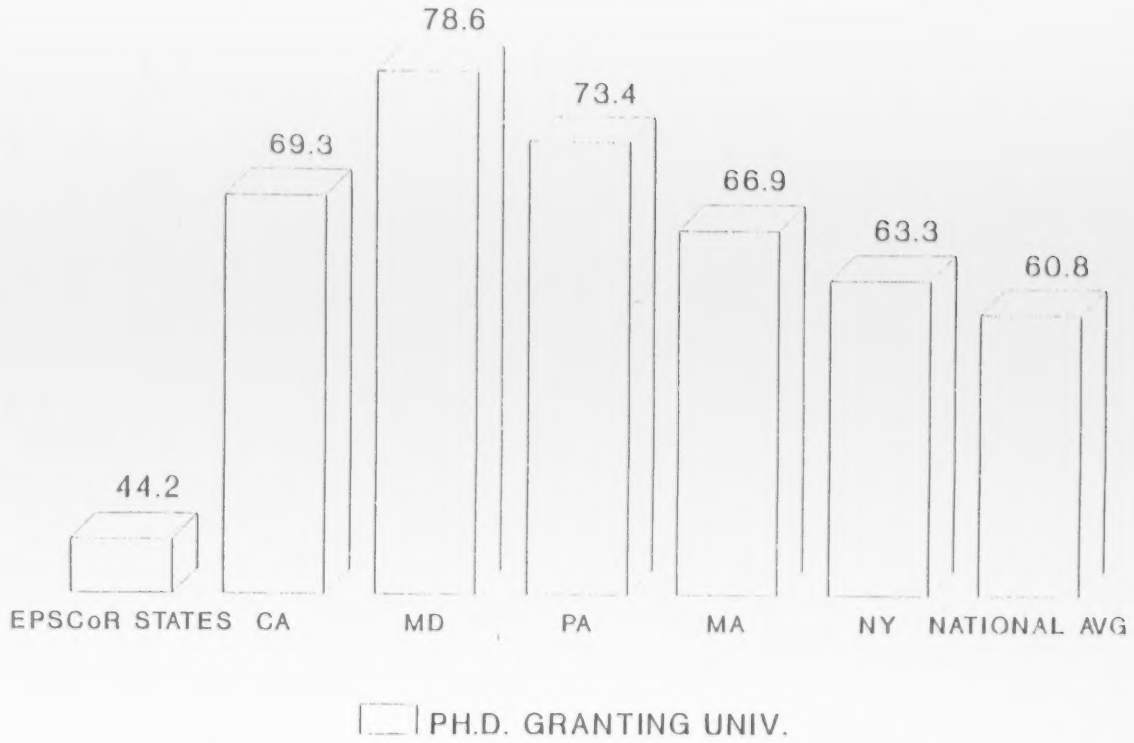
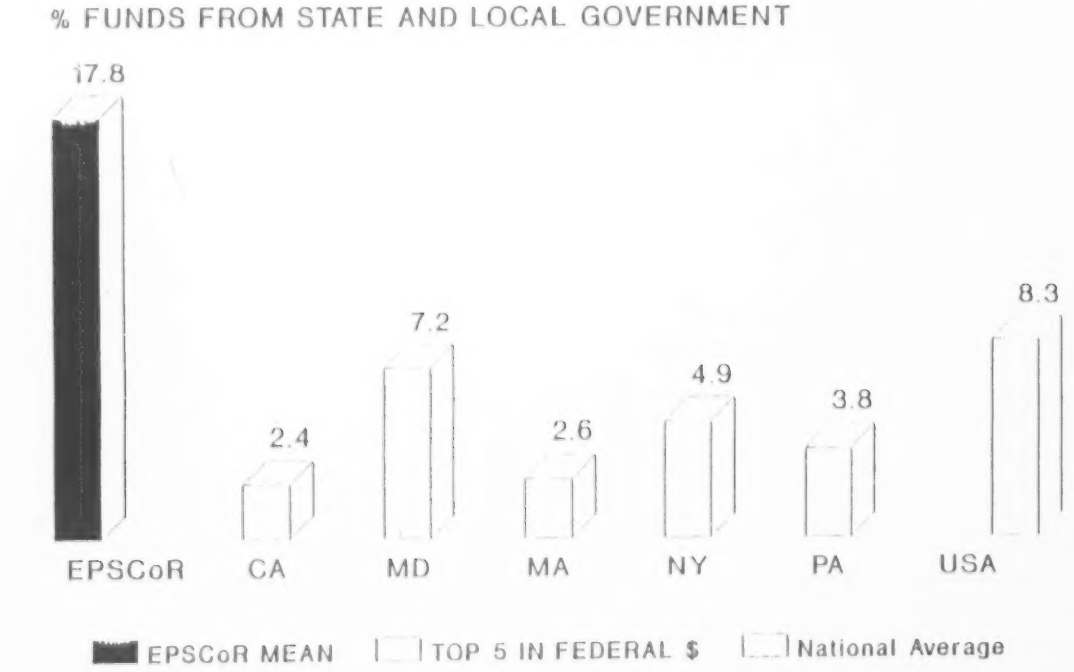


Chart IV

RESEARCH AND DEVELOPMENT SPENDING BY DOCTORATE-GRANTING UNIVERSITIES FY 88



Source: National Science Foundation

WEDNESDAY, MARCH 28, 1990.

MARKETS AND TRADE—RURAL REVITALIZATION

WITNESS

GLENN L. NELSON, CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Mr. WHITTEN. Next we will hear from Mr. Glenn L. Nelson.

Mr. NELSON. Mr. Chairman and members of the committee, my name is Glenn Nelson. I am a professor of agricultural and applied economics at the University of Minnesota. My concern for rural people is personal, as well as professional. My brother and many other relatives are farmers in Minnesota.

I am testifying today on behalf of the Consortium of Social Science Associations—COSSA—which represents 185,000 American scientists. My testimony has also been endorsed by the American Agricultural Economics Association, the Rural Sociological Society, and the Association of the Administrators of Home Economics.

My major point is that we strongly recommend that the markets, trade, and rural revitalization portion of the national research initiative in the budget of the Cooperative State Research Service receive $10 million, consisting of $5 million for markets and trade, and $5 million for rural revitalization. This level of funding has also been endorsed by the Experiment Station Committee on Organization and Policy—ESCOP—and by the National Association of State Universities and Land Grant Colleges.

The basis for our recommendation can be summarized under three points.

First, the opportunities and problems of rural people are national issues. The concerns of rural people are important because rural people and places make up a considerable proportion of our nation. For example, nearly one-quarter of the U.S. population resides in rural communities, and a majority of the nation's natural resource space and associate employment—including agriculture, forestry, and mining— is located in rural areas. Thus, the future prosperity and general wellbeing of the nation depend, to a significant extent, on the prospects of rural people and their communities.

The opportunities and problems of rural people are also a national concern because many of these issues affect rural people, businesses, and communities throughout the nation. An adequate response to the opportunity or problem depends critically on an initiative at the national level.

For example, the competitiveness of American enterprise and the quality of our domestic institutions is heavily dependent on the continued development of high self esteem and of excellent leadership among our citizenry. Our efforts to enhance these qualities among disadvantaged groups are especially important if we are to move closer to our national ideal of equal opportunity for all.

Results from research on leadership and self esteem spread quickly throughout the nation's schools and community education programs. The nation will short-change itself if it expects States and localities to pick up the total tab on a national concern.

Moving on to the second basis for our recommendations, the success of our efforts to broaden the options of rural businesses, com-

munities, and families depends on mobilizing the best talent available. Some of the talent must be focused on specific needs of society—for example, appropriate institutions and financing mechanisms for early childhood education in rural areas.

Some of the talent must concentrate on important areas where improved scientific knowledge would have application to a wide range of concerns—for example, a better understanding of the individual experiences, community characteristics, and public policies that create entrepreneurial activities.

In addition, our research strategy should recognize that the long-term future of rural America depends on producing the next generation of experts, as well as effectively utilizing current expertise.

Investments are needed in people in the form of fellowships for research conducted by outstanding graduate students and post-doctoral fellows. Investments are also needed in institutions that could potentially contribute to important research but are constrained by inadequate resources.

An appropriation is needed to keep today's best scientists working on rural issues and also to attract the best young people into research on rural problems and opportunities.

Mr. WHITTEN. Thank you very much. You heard an earlier statement on research. We believe it in to the nth degree. I don't know what we can do, but we appreciate your statement.

Mr. NELSON. Thank you.

Mr. WHITTEN. Thank you very much.

[Mr. Nelson's prepared statement follows:]

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TESTIMONY OF GLENN L. NELSON

PROFESSOR OF AGRICULTURAL AND APPLIED ECONOMICS

UNIVERSITY OF MINNESOTA

ST. PAUL, MINNESOTA

A statement prepared on behalf of the

Consortium of Social Science Associations

(COSSA)

on the

FY 1991 APPROPRIATION FOR THE

COOPERATIVE STATE RESEARCH SERVICE

U.S. DEPARTMENT OF AGRICULTURE

Prepared for the

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

HOUSE APPROPRIATIONS COMMITTEE

The Honorable Jamie L. Whitten, Chairman

March 28, 1990

Mr. Chairman and Members of the Subcommittee:

My name is Glenn Nelson. I am a Professor of Agricultural and Applied Economics at the University of Minnesota. My experience includes governmental work as a Senior Staff Economist on the President's Council of Economic Advisers and as State Economist of Minnesota. My concern for rural people is personal as well as professional. My brother and many other relatives are farmers in western Minnesota in the district of Representative Vin Weber.

I am testifying today on behalf of the Consortium of Social Science Associations (COSSA) which represents 185,000 American scientists across the wide spectrum of social and behavioral science disciplines. A list of COSSA Members, Affiliates, and Contributors is attached.

We strongly support funding of $150 million for all of the six research areas of the National Initiative for Research on Agriculture, Food and the Environment in the budget of the Cooperative State Research Service. This level of funding has also been endorsed by the Experiment Station Committee on Organization and Policy (ESCOP) and by the National Association of State Universities and Land Grant Colleges (NASULGC). We also strongly support the recommendations of ESCOP and NASULGC that the portion of the National Research Initiative devoted to "Markets, Trade, and Rural Revitalization" receive $10 million consisting of $5 million for Markets and Trade and $5 million for Rural Revitalization.

The bases for our recommendation can be summarized under three points:

- The opportunities and problems of rural people are national issues. States and localities acting alone will not adequately support research leading to greater industrial competitiveness, more nutritious foods, more productive individuals, more nurturing families, and better functioning communities. A national research initiative is needed if significant progress is to be made.

- The exploitation of opportunities and the solution of problems depends on mobilizing the best talent available. Some of the talent must be focused on specific needs of society. Some of the talent must concentrate on improving the base of scientific understanding that will lead to many, diverse payoffs of an unforeseen nature in the future. The National Research Initiative establishes a procedure for better mobilizing the best talent to broaden the options of rural businesses, communities, and families.

- The opportunities and problems of rural people have a multifaceted character that demands a comparable research strategy. For example, the future success of American businesses, including rural businesses, depends on the education and experience of tomorrow's work force taking place in today's families as well as on new technologies for producing products. A research program must include study of the managerial, organizational, family, and community features of opportunities and problems if the research is to produce findings useful to rural people as well as to scientists in narrow specialties.

The remainder of our testimony further elaborates these three points.

The Opportunities and Problems of Rural People Are National Issues

The concerns of rural people are important to the nation because rural (or nonmetropolitan) people and places make up a considerable proportion of our nation. To cite a few examples, nearly a quarter of the U.S. population resides in rural communities. A majority of the nation's natural resource base and associated employment--including agriculture, forestry, mining and fishing--is located in rural areas. Rural areas contain approximately three-fourths of local governmental units in the U.S. Nearly one-third of poor people live in rural places. The future prosperity and general well-being of the nation depend to a significant extent on the prospects of rural people and their communities.

In addition, many of the opportunities and problems of rural people are appropriately a national concern because the issues affect rural people, businesses, and communities throughout the nation. Because the pay-off from progress on these issues is broadly distributed over the nation, no single state or locality has sufficient incentive to mount a full scale attack on these issues. An adequate response to the opportunity or problem depends critically on an initiative at the national level. The following four examples are only a small sample of those that could be cited.

- The deregulation of transportation and communication is having major impacts on the well-being of rural residents and the viability of rural communities throughout the nation. We continue to lack adequate understanding of what has happened and what is likely to happen in the future. No one state can, or should, pay the entire cost of the needed studies whose benefits would accrue to residents of all states. An adequate response will depend on federal research funding.

- American business, including farming and agribusiness, has performed well in part because of continuously improving management techniques developed in research programs and refined in academic-business interactions. The Land Grant system has played an important role in this process and especially for rural businesses. The opportunities of new technologies and the pressures of international competition dictate continued improvement of management techniques if rural businesses are to remain competitive. These new techniques will have application throughout the U.S.

- The competitiveness of American enterprise and the quality of our domestic institutions is heavily dependent on the continued development of high self-esteem and of excellent leadership among our citizenry. Our efforts to enhance these qualities among historically disadvantaged populations are especially important if we are to move closer to our national ideals of a pluralistic society with equal opportunity for all regardless of race, sex or parental income. Results from research on leadership and self-esteem spread quickly throughout the nation's schools and community education programs. The nation will shortchange itself if it expects states and localities to pick up the tab on a national concern.

- Agriculture, forestry, mining, and manufacturing are important rural sectors whose fortunes depend critically on the ability to compete for

export markets and to meet competition from foreign imports. The analysis of world markets, including the impact of foreign agricultural and trade policies on U.S. industrial performance and prospects, is critical to U.S. competitiveness. These analyses have broad national application and will not be supported adequately by any single state.

The National Research Initiative that we support will focus research on these issues of broad national significance.

The Research Strategy Should Mobilize the Best Talent

The importance of the opportunities and problems facing rural residents implies that we should put in place a research strategy that recruits the best talent to attack the issues. The talent should be distributed between applied problems of current national significance and scientific problems of critical importance to future insights. The research strategy should encourage the best talent among the young to enter careers focused on the exciting, important issues of rural people.

The required expertise is spread among many people in diverse institutions and with diverse disciplinary backgrounds. Many, but not all, of these experts are in the Land Grant system supported in part with formula funding from the Cooperative State Research Service. The following are important examples of high priority research areas where participation of a broad range of researchers would be desirable.

- Today's youth, rural and urban, live in a difficult world with increased rates of marital divorce and separation, easier availability of drugs, greater pressures for premarital sex, and numerous other pressures. Research on better ways for our families, schools, and communities to address the problems of youth should be a high priority. The needed expertise is spread across the full spectrum of social and behavioral scientists and is not limited to those in Land Grant institutions.

- Regional economies within the nation have fared quite differently from the national average in the 1970s and 1980s. International trade pressures, accentuated by the federal policy decision to let the dollar freely trade, and rapid technological advance have caused the fortunes of particular sectors and regions to rise and fall with greater volatility than the overall economy. Research on the impacts of macroeconomic policies such as monetary, fiscal, and trade policies on rural communities of diverse types is needed in order to inform private decision makers as well as to inform policy makers. The relevant experts are not all within the Land Grant system.

The research strategy should allow for a mix of targeting the best talent on well-defined national needs and on more basic scientific knowledge. The following are examples of well-defined problems of rural people that might suitably be targeted for special emphasis:

- Appropriate institutions and financing mechanisms for early childhood education in rural areas, with special emphasis on children in poverty.

- Appropriate institutions, technologies, and financing mechanisms to deliver high quality doctor and hospital services to rural people.

- Appropriate institutions to enable the rural elderly who desire to remain in rural communities to do so with opportunities to serve the community and with access to important private and public services.

The following are examples of important areas where better scientific knowledge would have application to a wide range of concerns.

- Better knowledge of individual experiences, community characteristics, and public policies that foster creative entrepreneurial activities.

- More accurate demographic methods to project the size, regional distribution, and human capital endowment of the rural work force.

- Improved explanations, encompassing investments in people and institutions, of why some rural regions prosper while others decline.

The research strategy should recognize that the long-term future of rural America depends on producing the next generation of experts as well as on effectively utilizing current expertise. Investments are needed in people in the form of fellowships for research conducted by outstanding graduate students and postdoctoral fellows. Investments are needed in institutions that could potentially contribute to important research on rural problems but that are constrained by inadequate resources. The national interest in making the most of all of our resources, as well as equity, dictates that we should make a concerted effort to ensure that the potential talents of minorities and women are realized rather than left undeveloped.

The National Research Initiative that we support sets in place the institutions and funding to mobilize the best talent. The Initiative will reach out to the full array of talent from the entire U.S. science and technology sector. The Initiative will provide for mission-linked research focused on applied problems of national significance and for fundamental research focused on enhancing the nation's capacity for innovation. The National Research Initiative will help produce tomorrow's experts through research-strengthening grants to institutions and individuals.

The Research Strategy Should Be Multifaceted

The opportunities and problems of rural people have a multifaceted character that demands a comparable research strategy. The National Research Initiative recognizes this by proposing *simultaneous* support of six interrelated research areas: natural resources and the environment; nutrition, food quality, and health; new products, processes, and value-added; markets, trade, and rural revitalization; animal systems; and plant systems. The National Research Initiative further responds to the interrelated nature of the problems by proposing that a major portion of the research funds be devoted to fundamental multidisciplinary grants and to mission-linked multidisciplinary team grants.

We strongly endorse the need for funding all of the six research areas.

We also strongly endorse the need for more multidisciplinary research. In particular, the National Research Initiative must include study of the managerial, organizational, family, and community features of opportunities and problems if the research is to produce findings useful to rural people as well as to scientists in narrow specialties.

The following examples illustrate the important research which must draw simultaneously from several disciplines in order to address adequately the concerns of rural people.

- The protection and enhancement of the natural environment while promoting economic growth is a high priority in rural areas as well as elsewhere. Creative solutions will entail a blend of new technology, economic incentives, organizational reforms, and citizen education. The future prosperity, and in some cases viability, of many rural communities hinges on our ability to attack and solve this problem with input from social scientists in all fields.

- Physical infrastructure is a prerequisite for economic growth. Much of the nation's existing physical infrastructure, rural and urban, has fallen into disrepair. In addition, the exploitation of new technologies such as lasers, microchips, and satellites depends on investments in new forms of infrastructure. Society does not have sufficient resources to put every technology into every business and home. The design of the best alternatives for rural areas is likely to come from teams of researchers that can consider simultaneously the capabilities of technological devices, the organizations to manage provision and access, the incentives consistent with efficient provision and use, and the opportunities for new work and home arrangements.

- Human capital is widely recognized as a critical element in U.S. competitive strategy in international economic affairs. The creation and retention of high quality human capital is also critical to the competitiveness of rural economies. Most human capital is formed in the family, not in schools, universities, or businesses. But increasing disorder and instability in the American family threaten to reduce its capacity for producing healthy, well-educated, productive young people. The needed research involves experts in the family, in youth, in public services, in communities, and in business in order to solve this problem at the very heart of the future well-being of the nation in general and of rural areas in particular.

In conclusion, we urge your support for all of the six research areas in the National Research Initiative, including $10 million for "Markets, Trade, and Rural Revitalization." Thank you for the opportunity to present our views.

CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

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American Economic Association
American Historical Association
American Political Science Association
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American Statistical Association
Association of American Geographers
Association of American Law Schools
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AFFILIATES

American Agricultural Economics Association
American Assembly of Collegiate Schools of Business
American Association for Public Opinion Research
American Educational Research Association
American Psychological Society
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Society for Research on Adolescence
Society for Research in Child Development
Society for the Scientific Study of Religion
Southern Sociological Society
Southwestern Social Science Association
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University of Wisconsin, Madison
University of Wisconsin, Milwaukee
Yale University

STATEMENT OF

CONGRESSMAN GLEN BROWDER (D-AL)

March 28, 1990

BEFORE THE
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
COMMITTEE ON APPROPRIATIONS

RE: Support for the Center for Food Animal Production, Research and Service at Tuskegee University School of Veterinary Medicine

Chairman Whitten and Members of the Subcommittee, it is a distinct pleasure to appear before you today to introduce Dr. Walter C. Bowie, Dean of the School of Veterinary Medicine at Tuskegee University. Dr. Bowie has appeared before your Subcommittee on several previous occasions.

As you know, Mr. Chairman, in 1986, when your good friend, the late Congressman Bill Nichols served the 3rd District of Alabama, this Subcommmittee provided funding for the establishment of a Regional Institute for Food Animal Production, Research, and Service at the School of Veterinary Medicine at Tuskegee. Congressman Nichols was very proud that he was able to work with Tuskegee to secure that appropriation of $6 million.

Even though Bill Nichols was a man of countless accomplishments, he was especially pleased with the strong relationship that he had developed over the years with Dean Bowie, who has served in various roles at Tuskegee as a Professor, Department Head, Associate Dean, and Dean

at the Veterinary School, in a marvelous career that has spanned 43 years.

Mr. Chairman, Dean Bowie is the type of individual that typifies the commitment that Tuskegee University has in serving the needs of minorities, not only in Alabama, but the entire nation, especially the Southern Region. The Veterinary School at Tuskegee, for example, has trained 75% of all Black veterinarians in this country. Dean Bowie has been witness to much of this.

Mr. Chairman, a more dedicated and internationally respected individual you will not find. I am pleased to introduce Dr. Walter C. Bowie, Dean of the Veterinary Medicine School at Tuskegee.

WEDNESDAY, MARCH 28, 1990.

CENTER FOR FOOD ANIMAL PRODUCTION, RESEARCH AND SERVICE

WITNESSES

HON. GLEN BROWDER, A U.S. REPRESENTATIVE FROM THE STATE OF ALABAMA

DR. WALTER C. BOWIE, TUSKEGEE UNIVERSITY SCHOOL OF VETERINARY MEDICINE

Mr. WHITTEN. We turn now to Congressman Glen Browder and Doctor Bowie.

Mr. BROWDER. Thank you, Mr. Chairman.

Mr. WHITTEN. It is good so see you, sir.

Mr. BROWDER. It is nice to be here, Chairman Whitten.

Mr. WHITTEN. Thank you.

Mr. BROWDER. It is a distinct pleasure to appear before you today to introduce Doctor Walter C. Bowie, Dean of the School of Veterinary Medicine at Tuskegee University. Doctor Bowie has appeared before your subcommittee on several occasions.

As you know, Mr. Chairman, in 1986, when your good friend Congressman Bill Nickels, served the 3rd District of Alabama, this subcommittee provided funding for the establishment of a Regional Institute for Food Animal Production, Research, and Service at the School of Veterinary Medicine at Tuskegee. Congressman Nickels was very proud that he was able to work with Tuskegee and your committee to secure that appropriation of the $6 million.

Even though Bill Nickels was a man of countless accomplishments, he was especially proud of the strong relationship that he had developed over the years with Dean Bowie, who has served in various roles at Tuskegee as a professor, department head, associate dean, and dean of the Veterinary School in a marvelous career that has spanned 43 years.

Mr. Chairman, Dean Bowie is the type of individual that typifies the commitment that Tuskegee University has in serving the needs of minorities—not only in Alabama, but in Mississippi and the entire nation.

The Veterinary School at Tuskegee, for example, has trained 75 percent of all black veterinarians in this country. Dean Bowie has been witness to much of this.

Mr. Chairman, a more dedicated and internationally-respected individual you will not find.

I am pleased to introduce Doctor Walter C. Bowie, Dean of the Veterinary Medicine School at Tuskegee.

Mr. WHITTEN. Thank you very much. We do, indeed, appreciate your presentation. As mention was made of Bill Nickels, I haven't served with anyone that was a finer person or a more effective Member. We never had anybody raise a question about his ability or his conscientious effort. We miss him still.

Mr. BROWDER. Thank you, Mr. Chairman. He was revered in our State.

Dr. BOWIE. Thank you, Congressman Browder.

Mr. Chairman and members of the committee, because of time constraints I wish to make a very brief statement today and submit for the record an extended statement which will go into the record.

Mr. WHITTEN. Your prepared statement will be inserted immediately following this presentation.

Dr. BOWIE. I come to you today not only representing the School of Veterinary Medicine at Tuskegee, but also the many limited resource farmers of the Southeastern United States, and especially the farmers throughout the black belt region of the deep south who will reap the benefits from the construction and the research outcomes expected from the planned Center for Food Animal Production, Research, and Service.

Tuskegee is seeking a $1.2 million appropriation, which is needed if the construction of the Center is to proceed.

As you may recall, Mr. Chairman, your committee approved an earlier request for financial support to develop the Center at Tuskegee. I can assure you that the Center has been carefully planned. The architectural and engineering specifications have been completed. The project is now ready for competitive bidding.

In anticipation of the bidding process, we are seeking an additional appropriation to meet the unavoidable increases in the construction costs.

Rapidly-changing detailed building requirements and accompanying increases in construction costs are associated with the explosive transformation taking place in biotechnological research. To prevent erecting a facility that is obsolete before it is completed, the school is compelled to seek your approval of this additional appropriation.

As originally approved, the Center would, in the language of the 1986 appropriation, "address the needs of the limited- resource farmer"—that is, those American livestock producers who currently sell less than $20,000 of product annually and struggle to compete with the larger corporate farms.

As you know, although $6 million was approved, the Gramm-Rudman Bill impacted on all appropriations at that time. This law cut our 1986 planning grant and our 1987 construction grant by approximately $200,000. These Gramm-Rudman cuts have had far-reaching implications. The cuts have hampered our planning process and decreased the size and sophistication of the building being designed to house the Center.

The cuts have been combined with the escalation in the cost of doing research in the field of biotechnology and using live animals in research in keeping with Federal animal welfare guidelines that have resulted in this disparity.

We believe that you will agree that the justification for approval of the Tuskegee University's appropriation are well stated in your 1990 plan for the national initiative for research on agriculture and food and environment.

Mr. Chairman, the Tuskegee Center, if allowed to proceed as originally approved, has the potential of helping the agricultural economy not only in the South, but in the entire nation.

What experts called state-of-the-art in 1986 in research facilities is now known to be inadequate. Biotechnology is moving at such a fast pace that the progressive ideas that we proposed in the late

1980s are already being surpassed by even more sophisticated—and often more expensive—techniques.

Scientists at several major Federal and private research laboratories have expressed a desire to work with Tuskegee University on some much-needed animal-related research. These projects can only be done in a biocontainment research facility such as the one that is being planned at Tuskegee. In other words, the $1.2 million appropriation would enable Tuskegee to pursue these and other joint research projects.

Mr. Chairman, understandably you may recall that the late Congressman Bill Nickels was with me on my last appearance on here. This Center is very important to us, and we believe that this Center also represents or will represent a monument to the Honorable Bill Nickels' vision. By approving our request you will be guaranteeing construction of a facility in keeping with the late Congressman's dream of giving sustained help to a very important segment of the American population. What better legacy could the late Congressman leave to his constituency? That legacy must not be compromised.

Thank you very much, Mr. Chairman, for this opportunity to present this testimony to the subcommittee today.

Mr. WHITTEN. Doctor, thank you very much for your appearance here.

Dr. BOWIE. Thank you.

Mr. WHITTEN. We appreciate your institution.

Dr. BOWIE. Thank you very much.

[Dr. Bowie's prepared statement follows:]

Testimony

by

Walter C. Bowie, D.V.M., Ph.D.
Dean, School of Veterinary Medicine
Tuskegee University
Tuskegee, Alabama

March 28, 1990

before the

Rural Development, Agriculture, and Related Agencies
Subcommittee on Appropriations
Congress of the United States
House of Representatives

concerning appropriations

for

The Center for Food Animal Production,
Research, and Service
Tuskegee University

Mr. Chairman and members of the Subcommittee on Rural Development, Agriculture, and Related Agencies, I am Walter C. Bowie, Dean of the School of Veterinary Medicine at Tuskegee University, Tuskegee, Alabama. I am pleased to have the opportunity to talk with you today about a matter of great urgency.

I come to you not only representing the School of Veterinary Medicine at Tuskegee, but also the many limited resource farmers of the southeastern United States and especially the farmers throughout the Black belt region of the Deep South who will reap the benefits from the construction and the research outcomes expected from the planned Center for Food Animal Production, Research, and Service. Tuskegee is seeking a $1.2 million appropriation which is needed if construction of the Center is to proceed.

As you may recall, Mr. Chairman, your Rural Development, Agriculture, and Related Agencies Subcommittee on Appropriations approved an earlier request for financial support to develop a Center for Food Animal Production, Research, and Service within Tuskegee University's veterinary complex. Subsequently, the United States Department of Agriculture (USDA) and the Cooperative State Research Service (CSRS) approved a $6 million grant to Tuskegee but awarded $5.8 million due to the effects of the Gramm-Rudman Balanced Budget Law.

We are returning to Congress to request additional support because Tuskegee University is a privately controlled, state-related institution that does not receive state support. Under these conditions, it is not possible for Tuskegee to secure funding for its Center from the State of Alabama.

I can assure you that the Center has been carefully planned. The architectural and engineering specifications have been completed. The project is now ready for competitive bidding. In anticipation of the bidding process, we are seeking an additional appropriation to meet unavoidable increases in construction costs. The rising costs have been seen universally and are well-described in the 1989 Instrumentation and Equipment Survey for Agricultural Biotechnology. Rapidly changing, detailed building requirements and accompanying increases in construction costs are associated with the explosive transformation taking place in biotechnological research.[1] To prevent erecting a facility that is obsolete before it is completed, the School is compelled to seek your approval of this $1.2 million appropriation request.

The original concept for the Center came from the School of Veterinary Medicine's commitment to exploring new frontiers in biotechnology and adapting the new technology to the needs of limited resource farmers who can have an important socioeconomic impact on American agriculture.

As originally approved, the Center would, in the language of the 1986 proposal, address the needs of the limited resource farmer (i.e. those American livestock producers who currently sell less than $20,000 of product annually and struggle to compete with large corporate farms) by:

1) establishing within the School a Regional Institute for Food Animal Production, Research, and Service that focuses on the applied aspects of research, instruction, and management that show the greatest promise for increasing food animals for human consumption,
2) expanding facilities that assist with the health and preventive medical care of food-producing animals, particularly small ruminants and other minor species,
3) focusing the training, research, and outreach efforts of the Regional Institute on the emerging career opportunities in the food animal production enterprise.

In addition, the sophistication of the modern Center as originally approved would enhance the School's ability to produce well-educated biomedical scientists who would help meet America's research and service needs well into the 21st Century. The School would also graduate veterinarians prepared to put this growing biotechnological knowledge to use for the benefit of people, animals, and the environment.

As you know, although $6 million was approved for the Center, the Gramm-Rudman Balanced Budget Law impacted on all appropriations. This law cut our 1986 planning grant and our 1987 construction grant by approximately $200,000. These Gramm-Rudman cuts have had far-reaching implications. The cuts have hampered our planning process and decreased the size and sophistication of the building being designed to house the Center. In working with the architects, we have been able to bring the planning and construction costs down to a bare minimum of $7 million. Consequently, the cuts, when combined with the escalation in the costs of doing research in the field of biotechnology and using live animals in research in keeping with federal animal welfare guidelines, have resulted in a $1.2 million disparity between what Tuskegee had initially received and what it now knows it needs to complete this project.

We believe you will agree that justifications for approval of Tuskegee University's $1.2 million appropriation are especially well-stated in the January 29, 1990 draft of the USDA's Program Plan for the National Initiative for Research on Agriculture, Food and Environment. New technology, the Program Plan states, must be developed to provide more environmentally sound and sustainable production practices for agriculture. The technological advances that improve production practices will permit the limited resource farmers to produce more food at a lower cost and thus improve the quality of rural life.[2]

The Program Plan also warns that to underinvest in such high-priority agricultural research would be a disservice to the limited resource farmers and, ultimately, to the American consumers.[2] We at Tuskegee University's School of Veterinary Medicine take this to be a mandate to us to do all in our power

to insure the construction of a fully functional Center for Food Animal Production, Research, and Service.

From our study of the current state of the limited resource farmer and the rapid rise in the cost of modern biotechnological research, we at Tuskegee believe it is readily apparent that any further reduction in the Center's size or decrease in its potential for supporting competitive research diminishes the Center's mission of facilitating research in biotechnology that will benefit limited resource farmers. This mission is too important to receive only piecemeal support.

Tuskegee's Center, if allowed to proceed as originally approved, has the potential of helping the agricultural economy not only in the South, but in the entire nation. As predicted in the January 1990 Program Plan, the United States will regain its competitive edge in agriculture only by making major investments in sophisticated technology and developing better agricultural technology. These investments could lead to improved feed crops and additives, disease-resistant livestock, growth hormones to speed animal maturation, and embryo transfer techniques for breeding superior animals. The ultimate benefit would be that the American farmer produces more food for more people and supplies a better export market.[1] With an agricultural community that provides more than 20% of all American jobs, the United States cannot afford to slight livestock production, research, and service.

The Center, as originally planned, will also promote Tuskegee's continued commitment to the transfer of biotechnological information to less developed countries. Its multifaceted activities will most certainly have far reaching effects on international markets. As you know, much of the American export trade, especially in agriculture, is with less developed countries. In addition, it has already been shown that American activities that decrease international hunger also decrease the discontent that contributes to unstable political processes.[3]

By design, service is to be an important aspect of the Center. If the Center's targeted population of limited resource farmers and livestock producers are to survive and succeed, information gleaned from sophisticated research both at Tuskegee University and elsewhere must be transferred to them in a form they can use. Starting with the days when the great George Washington Carver packed up his seeds and took his message to the fields of Alabama, Tuskegee has always given priority to the development of practical solutions to complex problems and the dispersal of information in a readily utilizable form. By its actions, Tuskegee has shown that neither applied nor basic research have an impact on agribusiness and the well-being of the rural population until the findings are understandable, affordable, and practical.

Tuskegee's service to the limited resource farmers is cited in the Task Force Report on Black Farm Ownership by the USDA. The report says, "With few exceptions, little research has been

specifically focused on the needs of small black farmers."[4] The exceptions that the report named were those projects conducted at Tuskegee University and the small farm research program of the Agricultural Research Service.[4] Now, as in the past, the scientists of Tuskegee University sincerely believe that technological advances that improve production practices will permit the limited resource farmers to produce more food at a lower cost and thus improve the quality of rural life.

The urgent need for an additional appropriation is perhaps best illustrated by the results of an extensive study conducted by faculty in the School of Veterinary Medicine after Tuskegee received its initial appropriation in 1986. They visited state-of-the-art research facilities throughout the nation. They found that biotechnology is racing ahead far faster than anyone could have anticipated. What experts called state-of-the-art in 1986 is now known to be inadequate. Biotechnology is moving at such a fast pace, in fact, that the progressive ideas proposed in the late 1980's are already being surpassed by even more sophisticated and often more expensive techniques.

This means that the costs of facilities to support research in biotechnology are rising very rapidly. For example, buildings designed for modern research must meet increasingly rigid requirements including special environmental controls, plumbing, power supplies, and air quality controls.

The tremendous costs are well-illustrated in the November 1989 study on instrumentation and equipment for agricultural biotechnology conducted by the Committee on Biotechnology, Division of Agriculture, National Association of State Universities and Land-Grant Colleges. They reported that renovation (not construction) of just one laboratory for biotechnology research costs from $70,000 to $200,000.[1]

A special portion of the Center, although expensive to build, will add an important new dimension to research at Tuskegee University. This segment of the building will be constructed to meet or exceed federal and NIH guidelines for what is referred to as a biocontainment or biosafety level 3 facility. This means that built-in features and approved protocol in the biocontainment area will prevent all live infectious agents and toxic chemicals from leaving the laboratory in an active form and potentially contaminating the environment. Specially engineered barriers will guard against laboratory-associated infections and hazardous chemical exposures. In addition, special features and safety equipment are being built into every research laboratory in the facility to protect animal care staff, other occupants of the facility, the research animals, and the environment from exposure to hazardous biological, chemical, and physical agents used in animal investigations.

Although expensive to build, we believe you will agree, Mr. Chairman, that including laboratory modules in a biosafety level 3 in Tuskegee's Center will be cost effective. It will enable Tuskegee University's researchers to investigate in greater depth such important infectious diseases as listeriosis and

tuberculosis. The Mycobacterium spp that cause tuberculosis in cattle, swine, and poultry, for example, results in more than $200 million in livestock losses yearly.

The biocontainment laboratories will also promote valuable collaborative research. Scientists at several major federal and private research laboratories have expressed a desire to work with Tuskegee University on some much-needed, animal-related research. These projects can only be done in a biocontainment facility such as the one planned at Tuskegee. In other words, the $1.2 million appropriation would enable Tuskegee to pursue these and other joint research projects that will impact on livestock production as well as public health.

Additional expenses for the Center reflect the heightened public concerns about animal research. To reinforce the public's confidence in the humane treatment of animals in federally financed facilities, the new Center must be a showcase for the proper use of animals in research.

The housing and care of research animals have been long-standing concerns at the School of Veterinary Medicine. Now, with increased public sensitivity to live animal research, the School must assure than no shortcuts are taken in providing for the well-being of its research animals and complying with sound guidelines for their care and management.

The current design of the animal facilities in the Center for Food Animal Production, Research, and Service at Tuskegee University will meet or exceed the standards set forth by the Animal Welfare Act, the Animal and Plant Health Inspection Service (APHIS) of the USDA, the Office for Protection from Research Risks, and the National Institutes of Health.

You may recall, Mr. Chairman, that the late Congressman Bill Nichols accompanied me when I last appeared before you to give testimony. The Center was a high priority project for him. Congressman Nichols had a sustained interest in and commitment to Tuskegee University and the School of Veterinary Medicine. His pride in Tuskegee and interest in its scientists were evident during his frequent visits. He knew first-hand about the important work at Tuskegee University, especially in agriculture and animal health.

Understandably, we at Tuskegee University view the Center as a monument to the Honorable Bill Nichols' vision. By approving our request, you will be guaranteeing construction of a facility in keeping with the late congressman's dream of giving sustained help to a very important segment of the American population. What better legacy could the late congressman leave to his constituency? That legacy must not be compromised.

Thank you, Mr. Chairman, for this opportunity to present this testimony to the Subcommittee today.

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WEDNESDAY, MARCH 28, 1990.

RESEARCH FOR PACIFIC NORTHWEST

WITNESS

HON. LES AUCOIN, A U.S. REPRESENTATIVE FROM THE STATE OF OREGON

Mr. WHITTEN. We turn now to our colleague, the Honorable Les AuCoin.

Les, we are glad to have you here.

Mr. AUCOIN. It is good to be here, Mr. Chairman. Thank you.

Mr. Chairman, thank you very much for the opportunity to come before your subcommittee today with my request for the fiscal year 1991 appropriations.

You have, for many years, been very helpful to Oregon growers, and I want to tell you how much I appreciate your attentiveness to the unique needs of the Pacific Northwest.

I have some brief remarks, and I would like to give them and then leave a complete statement for your committee's record.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your presentation.

Mr. AUCOIN. Mr. Chairman, with over 60 high-value, specialty crops, in addition to major production of field crops and livestock, Oregon's agricultural diversity and quality are its strengths. The question before us in Oregon is how to maintain those strengths in a time of rapidly-developing international markets, changing consumer preferences, and growing environmental concerns and difficulties.

My constituents believe we will stay strong in agriculture if we have as a priority a well-funded and well-targeted research agenda. In what I think is a healthy development, that research agenda is increasingly being defined in the Pacific Northwest on a regional basis.

Instead of competing for scarce resources, institutions and States out my way are cooperating on projects of mutual interest. In a highly-varied region where climate and other growing conditions cross State lines it makes sense to share the limited resources in order to stretch their usefulness to the limit. When that happens we think everybody wins, and everybody is winning.

These conditions describe, Mr. Chairman, the kind of research you have always supported. It is research that pays off for growers and the communities they live in.

Today I have several requests for research projects which are of the highest priority for Oregon and for the Pacific Northwest. First, Mr. Chairman, Eastern Filbert Blight is still advancing into the major hazelnut producing areas of Oregon. We have made strides since USDA first began to help us tackle this problem three years ago, but much remains to be done if we are to prevail over this infestation. If we do, the future is bright for this $45 million industry.

A new hazlenut variety has just been introduced which promises to capture an even greater share of the high-quality market. And, as you know, Mr. Chairman, most filberts or hazelnuts produced in

the nation are produced not only in Oregon, but in my Congressional District.

Current research on eastern filbert blight, which is threatening our commodity, is focused on breeding resistant strains of filbert trees, testing the most promising fungicides, and probing the biology of the blight so that we can better control it. To accelerate those advances i would like to request, Mr. Chairman, of you and your subcommittee, your support for $215,000 in additional funds to the research program on Eastern filbert blight based at Oregon State University. This request includes components from several USDA programs to enhance work already supported by the Department of Agriculture, Oregon State University, and the filbert growers, themselves.

My request is that you match these local efforts with renewed Federal commitment to ensure the survival and continued growth of this significant agricultural industry in my Congressional District.

I will forward detailed and additional information about our request so you will have all the details.

Mr. Chairman, I hope we can count on your support this year. I certainly appreciate your attention to this urgent priority in our State.

That concludes my statement.

Mr. WHITTEN. Thank you very much. We appreciate not only your service here but your service to the country. It is a pleasure to serve with you.

Mr. AUCOIN. Thank you, Mr. Chairman.

[Congressman AuCoin's prepared statement follows:]

TESTIMONY OF THE HONORABLE LES AUCOIN

BEFORE THE APPROPRIATIONS SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

MARCH 28, 1990

Mr. Chairman, thank you for the opportunity to come before your subcommittee today with my requests for Fiscal Year 1991 appropriations. For many years you have been very helpful to Oregon growers, and I want you to know how much I appreciate your attentiveness to the unique needs of the Pacific Northwest. I have some brief remarks and will give you a complete statement for the record.

With over 60 high value specialty crops in addition to major production of field crops and livestock, Oregon's agricultural diversity and quality are its strengths. The question is how to maintain these strengths in a time of rapidly developing international markets, changing consumer preferences, and growing environmental concerns. My constituents believe we will stay strong in agriculture if we have as a priority a well funded and well targeted research agenda.

In what I think is a healthy development, that research agenda is increasingly being defined in the Pacific Northwest on a regional basis. Instead of competing for scarce resources, institutions and states are cooperating on projects of mutual interest. In a highly varied region where climate and other growing conditions cross state lines it makes sense to share limited resources in order to stretch their usefullness to the limit. When that happens, everybody wins.

These conditions describe the kind of research you have always supported in the past, Mr. Chairman. It's research that pays off for growers and the communities they live in. Today, I have several requests for research projects which are of the highest priority for Oregon and for the Pacific Northwest.

EASTERN FILBERT BLIGHT RESEARCH

Mr. Chairman, Eastern filbert blight is still advancing into the major hazelnut producing areas of Oregon. We've made strides since USDA first began to help us tackle this problem three years ago, but much remains to be done if we are to prevail over this pest. If we do, the future is bright for this $45 million dollar industry. A new hazelnut variety has just been introduced which promises to capture a greater share of the high-quality market.

Current research on Eastern filbert blight is focused on three areas. We are breeding resistant strains of filbert trees, and replacement trees for some applications will soon be on line.

We are testing the most promising fungicides. And we are learning a great deal about the biology of the blight which will help us to control it.

To accelerate these advances, I am requesting your support for a $215,000 addition to the research program on Eastern filbert blight based at Oregon State University. $100,000 of this amount would be in the form of a CSRS grant to accelerate development of safe chemical and biological controls, develop disease management strategies to reduce losses in the near term, and accelerate development of genetically resistant strains. $85,000 would be for ARS to continue research on the biology of this fungus. And $30,000 would go to APHIS to enhance survey work already being done to monitor the spread of the fungus.

The Oregon Department of Agriculture, Oregon State University, and the growers already support all these components of the research at a high level. My request is that you match their efforts with a renewed federal commitment to ensure the survival and continued growth of the filbert industry. Mr. Chairman, I appreciate your attention to this urgent priority for our state, and I am prepared to forward additional information about our request.

RUSSIAN WHEAT APHID RESEARCH IN THE NORTHWEST

Mr. Chairman, as you know, the Russian wheat aphid remains a potential threat to this nation's wheat and barley crop. Last year the Congress provided, under your leadership, in addition to a national research program on the aphid, a $350,000 special grant to address the aphid problem in the Pacific Northwest. I am asking you to renew this grant in the coming year.

Growers in the Northwest are currently spending hundreds of thousands of dollars on pesticides to control the Russian wheat aphid. But chemical controls are only a stop-gap solution. Our research is designed to develop resistant strains of wheat and barley. This takes several years. We are also working on insect predators adaptable to Northwest conditions. And in the meantime we need to understand better how the aphid is adapting to Northwest crops and climate so controls can be applied in the most effective and judicious ways.

The $350,000 grant goes to a four-state research program including Oregon, Washington, Idaho, and California. It is not a tremendous amount compared to the national research program on Russian wheat aphid, but it enables us to deal with this pest with measures targeted to Northwest conditions. I hope you will be able to renew this grant.

NORTHWEST SMALL FRUITS RESEARCH CENTER

Mr. Chairman, last year you provided $50,000 for a feasibility study of a Northwest Small Fruits Research Center to be supported by both ARS and CSRS. My understanding is that the study is nearly complete and a report will be available to you in the near future. My request is that you support the proposal in the report.

The Northwest Small Fruits Center will be a tremendous regional resource for the berry and grape industries of Oregon, Washington, and Idaho. The land grant universities and 14 commodity commissions and trade associations in the three states have worked very closely to develop the proposal in concert with ARS and CSRS. State and private sources will provide the bulk of the funding for ongoing operations of the center once it is completed with the first year's appropriation.

Growers of berries and grapes are typically family farmers who belong to relatively small commodity organizations. Because their needs and interests are so varied there has been so far no comprehensive effort to address their priority research needs and build the kind of cooperative network which the center will make possible. With exciting opportunities to create and capture new markets for high quality products in the global marketplace, the time is overdue for this kind of regional effort. Northwest growers, marketers, and researchers should be commended for pooling their resources to create what is in my view a tremendous achievement which merits the strong support of the Congress.

OREGON/MASSACHUSETTS BIOTECHNOLOGY PARTNERSHIP

Mr. Chairman, you recently received testimony from the Oregon Governor's Office of Educational Policy and Planning about the Oregon/Massachusetts Biotechnology Partnership. Because I believe this initiative holds great promise for business development in biotechnology not only in the two states but also throughout the country I want you to know that it has my strong support.

The partnership takes advantage of the strengths of the two states. Oregon has not only a strong research programs in plant genetics and biochemistry but also the natural resource base for a variety of foods and fibers. Massachusetts has the expertise in technology transfer and biotechnology business development. Together we are poised to make bioprocessing technologies available to entrepreneurs who will not only create economic opportunity but also in turn support continued biotechnology research on a sustained basis.

Last year you provided $250,000 to get this partnership off the ground. For next year we are asking $5 million which will be

matched by an equal amount from the two states. Given the imperative that we stay internationally competitive and the potential which exists for biotechnology business development, I believe this proposal merits the subcommittee's support.

EXPORT SERVICES CENTER

Another ongoing research initiative which brings regional resources to bear on regional challenges is the Export Services Center at the Wheat Marketing Center in Portland, Oregon. As you know, the Wheat Marketing Center is not only for grains but also for many other Northwest commodities. The Export Services Center is a critical tool for penetrating the expanding markets of the Pacific Rim; it provides the technical assistance necessary to meet quality standards and overcome other trade barriers imposed by importers. I ask for your continued support for this CSRS special grant.

WHEAT QUALITY LABS

The four ARS Wheat Quality Labs provide invaluable services to the wheat industry across the country. The Western lab in particular evaluates wheat strains for quality characteristics in milling, mixing and baking and is improving the efficiency of wheat quality testing. Although Congress provided an increase for the labs last year, funding has over several years not kept pace with new program priorities which include biotechnology, food safety, and water quality. The industry is supporting an increase for the labs next year of $2 million to be divided equally among them, and I urge you to respond favorably to this request.

SOIL AND WATER CONSERVATION

Mr. Chairman, your leadership in providing for soil and water conservation is greatly appreciated throughout Oregon. The National Association of Conservation Districts has made recommendations which I hope have your support. The recommended increase for conservation operations would provide enough Oregon soil conservation technicians to complete the requirements of the Food Security Act and would allow for an approach to other long-neglected priority projects in districts throughout the State.

RURAL DEVELOPMENT CENTERS

Finally, I believe that the Rural Development Centers merit the continued support of the subcommittee. Once again, they are cut out of the President's budget request. Changes in Oregon's natural resource based economy continue to pose new challenges to small cities and rural areas throughout the state. There is no substitute for the centers and the expertise they can bring to bear on problems in communities whose leaders are by the fact of geography isolated from the mainstream. Your assistance once again in keeping the doors open at these centers is greatly appreciated.

WEDNESDAY, MARCH 28, 1990.

TRADE CENTER FOR AQUATIC PRODUCTS

WITNESSES

HON. CLAUDINE SCHNEIDER, A U.S. REPRESENTATIVE FROM THE STATE OF RHODE ISLAND

ROBERT MILLER, DEAN, UNIVERSITY OF RHODE ISLAND

Mr. WHITTEN. Next is the Honorable Claudine Schneider. How do you do?

Ms. SCHNEIDER. Thank you, Mr. Chairman. Just fine. How are you today?

Mr. WHITTEN. Just fine. Nice to see you.

Ms. SCHNEIDER. Might I also invite Dean Robert Miller of the University of Rhode Island to join me at the witness table, please?

Mr. WHITTEN. We will be glad to hear from him.

Ms. SCHNEIDER. He will share with us a few thoughts.

I thank you very much for the opportunity to appear before you today. As usual, I have a proposal that you just cannot refuse.

Mr. WHITTEN. That makes it easier for us.

Ms. SCHNEIDER. Absolutely. I am here today to speak in support of an International Trade Development Center for Aquatic Products. This Trade Center we are proposing would be located at the University of Rhode Island. The proposal for this Trade Center has essentially two objectives: one, to decrease the nation's annual trade deficits; two, to generate increased incomes and employment opportunities in rural and coastal communities by promoting the exports of fish and fisheries products.

I don't know whether you know it or not, but our trade deficit in fish and fisheries products was $6.6 billion in 1988. We imported $8.9 billion and exported only $2.3 billion. Fish and fisheries products are the nation's third largest import, which follows right after our automobile and our electronics industries.

In 1988 we imported more fish than we did coffee, all vegetables, and all other meats combined. So the deficit in fisheries products accounted for 5 percent of the entire U.S. trade deficit.

The Trade Center that I am discussing with you today would address this nearly $7 billion trade deficit in four significant ways.

First of all, it would analyze and assemble data on international markets for U.S. fish.

Secondly, it would develop some value-added products which, in our part of the country, we have an enormous amount of experience and capability in doing.

Third, we would determine what some of the barriers and some of the inefficiencies are in our ability as a nation to export our aquatic products.

Fourthly, it would disseminate information throughout the United States on opportunities in fisheries and fisheries products.

Needless to say, the benefits are extensive when we look at our competitive stature in the global economy and the importance of the fishing industry to our own economy. Aquaculture is very fast growing, and the opening of foreign markets is moving right along.

But as aquaculture expands, so, too, does the need for fish feed, which will be a boon to the United States' grain industry which supplies that feed.

Granted, the Trade Center that we are talking about will have a regional focus—primarily the Northeast, but because it will be the only one in the United States, it will have great national significance.

The reason that we are so enthusiastic about locating it at the University of Rhode Island is because the University is perfectly situated in that we have, adjacent to the University, a commercial fishing industry that contributes more than three-quarters of a billion dollars each year to the State's economy, and the Rhode Island fishing industry has led the United States in exporting fishery products to Japan.

I might also mention that Rhode Island fishermen have been able to successfully market what heretofore have been under-utilized fish—some things you may have never heard of—at least I never heard of until it was offered on the dinner plate to me, such things as pout and skate—and butterfish and mackerel and squid I am sure you have heard of. But these have potential markets in both Japan and in Western Europe. There are dozens of other species that are abundant and, quite frankly, there is an unlimited market in the foreign nations but also in the United States.

I might also mention that the University of Rhode Island's Graduate School of Oceanography is internationally renowned. We have been designated by NOAA as a center for excellence, and the Northeast Region of NOAA Fisheries has formally endorsed the establishment of this Trade Center at the University of Rhode Island. As a matter of fact, last year a special cooperative State Research Service review panel from the Department of Agriculture came to the University of Rhode Island to assess the viability of locating the Trade Center there. I just want to share with you briefly what their comments were.

They said, "the review panel strongly supports the creation of a Center for International Trade in Aquatic Products at the University of Rhode Island with the Department of Resource Economics the lead unit. Such a center fits well with the international reputation of the University of Rhode Island in fisheries and seafood products. There is a potentially huge payoff from successful funding of a Center for International Trade."

The Northeast Regional Aquaculture Center, which is located in North Dartmouth, Massachusetts, also strongly supports the establishment of this Trade Center at the University of Rhode Island.

I will not enumerate the various other endorsements and recommendations that have been provided for the University of Rhode Island Trade Center, but I would like to include each of these in the record. There are a series of them. Many of them are Federal, some are regional, and, of course, many are local in terms of support for the project at that site.

Just by way of comparison, I think I have made it fairly clear that it will be a Northeast location at the University of Rhode Island, but its value will be nationwide. This is critically important because when we look at our competitors—for example, Norway. Right now Norway spends $9 million a year just to promote their

aquacultured salmon in the United States and in Japanese markets. So the concept of this type of Trade Center is not new, but, unfortunately, it is new for the United States. Canada, Norway, Ireland, and Scotland already have their own International Trade Centers for Fisheries Products.

So, in order to qualify for this we did our homework. We have learned that the two primary requirements for the grants to establish these Centers are for 50 percent matching funds from the State or the University and for the University to be a land grant college.

Well, not only is the University a land grant college, but it is also a sea grant college. And 50 percent of the funds have already been alloted by the State of Rhode Island.

What I am seeking from this committee is an appropriation of $650,000 for fiscal year 1991 as the Federal match to establish the Trade Center at URI.

On a second matter, I would like to seek continued funding for another project at the University of Rhode Island. Last year I appeared before this subcommittee to request funds for a feasibility study for a new building at the University of Rhode Island because of an old, outdated facility. The subcommittee agreed with my assessment and the subcommittee appropriated $30,000 for a feasibility study. The Coastal Institute will be a multi-disciplinary project, and it will enhance the University of Rhode Island's international reputation.

The objectives of the Institute are three-fold: first of all, to conduct and coordinate scientific research on coastal lands and also on coastal waters; second, to provide comprehensive educational programs not only for the locale and the region, but also for national industry and government agencies; and, third, to provide scientific, technical, management, and policy support to the State and Federal agencies and the commercial sector on these coastal matters.

I might also mention that not only do we have the University of Rhode Island—both a land grant and a sea grant college—but adjacent to it we have two Federal agencies. We have NOAA and the Environmental Protection Agency. And so the confluence of resources and technical skills in that region is unmatched in any other part of the United States.

The Institute will combine the expertise of the URI's campuses and work with the State and Federal agencies.

In conclusion, I am seeking $1.972 million for engineering and architectural design work and $5.741 million to fund the first phase of construction.

Mr. Chairman, I thank you very much for inviting me to testify before the subcommittee today and I certainly hope that you will look favorably upon these two very important proposals.

Mr. WHITTEN. The committee is very much aware of our international trade problems—particularly the future for the fisheries industry if we take advantage of aquaculture. We are trying to take care of it. We have had a study made, which is in the process of trying to find out just where we stand.

One of the things that bothers me is that we seem to have opened our doors to everything in the world, but other countries don't open theirs to us. We've got to send somebody around begging

them to let our stuff in. Once you get rid of one reason, they come up with another excuse. I think we are the only country that follows our policy.

One or two years ago I had a study made that found that there were 115 countries where we were sending guns and ammunition, when they needed food and clothing. We need to review our overall policy.

But we have asked for this study to see just where we stand and what we can do.

We appreciate your appearance.

Ms. SCHNEIDER. Well, I certainly agree with you in terms of our overall policy, but I also feel that as we work through our trade——

Mr. WHITTEN. You mean you are interested parochially?

Ms. SCHNEIDER. No, no, no. You know, Mr. Chairman, that I am hardly so parochial.

Mr. WHITTEN. We all know that.

Ms. SCHNEIDER. Well, I do feel that—and I will be talking to Carla Hills later today, and I will carry your message to her because she clearly is in a position to do more in this respect.

Mr. WHITTEN. Thank you.

Ms. SCHNEIDER. But when you suggest that they are beating us in other areas, I think one of the advantages that this particular part of the country has is that we have figured out how to take underutilized species, and they may be beating us in salmon, but we can beat them in mackerel and we can beat them in yellowtail and all different types of things. We can outsmart them. But we need to consolidate the scientific and technical resources.

Mr. WHITTEN. Thank you very much for your appearance.

Ms. SCHNEIDER. Thank you kindly. Might we be able to have the dean of the College of Resource Development from the University of Rhode Island just share a few thoughts with you briefly?

Mr. WHITTEN. We would be glad to have him do so. Your complete statement will appear in the record, but you might hit a couple of highlights, Dean Miller.

Dean MILLER. Thank you very much, Mr. Chairman.

I will keep this brief because of time constraints and the fact that Congresswoman Schneider has done a very excellent job of summarizing what we have in mind.

I want to talk very briefly about the one issue that you just raised about market availability, particularly in some of the European and Japanese countries.

One of the things that I am going to emphasize, because it is my prerogative as a dean of a College of Resource Development within a land grant university and a sea grant university to do so, is to emphasize the quality of the faculty that would be involved as far as the International Trade Center, which was described, and then also talk about the facility which was basically now proposed also for the University of Rhode Island.

First let me talk about the Trade Center and market. The faculty in the Resource Economics Department at the University of Rhode Island have been in contact and have been in the country of Japan and have actually looked at what products in the area of seafood or aquaculture would be available and useful to the restaurateurs or

the individuals that are marketing seafood products within Japan. I think that gives an appreciation for some of the barriers that stand in the way of product development and sales and hopefully will make a level playing field for some of the economic issues that we are talking about.

Again, the quality of this faculty is well renowned. It is the largest group of scientists that you will find that are really dealing with fisheries marketing and all of the aspects of seafood and aquaculture—again, a very, very unique group. I am very proud and pleased to be the dean of a college that has that kind of talent. I think, again, it would be a very good investment as far as the accomplishments that would come forth from this kind of activity.

I am going to turn very briefly to the facility. Last week we were privileged to have a very fine review team from USDA CSRS basically as part of the feasibility study of the building, which would be part of the Coastal Institute on Narragansett Bay.

This particular building—again, thinking of the faculty—would house three groups of faculty. One would be the fisheries, animal, and veterinary science faculty, and the obvious fact that they are involved in aquaculture as well as stress-related research. We would house the natural resource science group, which, as an individual group, has the ability to be involved in some of the environmental aspects of agriculture and aquaculture, as well as the impact of man, the anthropological involvement in water quality. We would have, again, the resource economics group, which I talked very highly about just a moment ago when it came to the International Trade Center. And we would have a group which is a Coastal Resource Management Group housed in this building. It is part of a plan which would address not just environmental issues but also the aquaculture production issues.

Right now these groups are housed in seven different buildings on campus, and what we would do by bringing them all together is to focus and make interaction and the development of integrated programming such as the International Trade Center and such as some of our environmental programs. It would facilitate them a great deal.

Again, I would be very happy to answer any questions that you might have. I appreciate the opportunity to be here today, and I look forward to your participation in looking at the larger testimony.

Mr. WHITTEN. I won't ask further questions. We do appreciate your appearance. We have other witnesses that we have to turn to. We are following an independent course of opening our markets to foreign imports and not doing anything to require equal treatment on the other end of it. That is one of our biggest problems.

The other thing is that we have so many requirements on our own industry, including shipping and others, that we frequently stand by and let ships fly another flag. What we are doing now is letting American industry go abroad and use cheap labor and send the products back in here. This is not new. I have been stressing this all along and can prove it, in my opinion.

Thank you very much.

Ms. SCHNEIDER. This Trade Center, Mr. Chairman, would hone in on the fisheries industry, in particular, and look at some of those barriers that we have put up to our own people and also that foreign governments have. I foresee it being as a policy recommendation center, too, to provide us with recommendations as to how we can change the way we do things and what we should push for other nations.

Mr. WHITTEN. As I said, we are having a study made at the present time.

Ms. SCHNEIDER. Great. Thank you, Mr. Chairman.

Dean MILLER. Thank you.

[The prepared statements follow:]

[CLERK'S NOTE.—Items submitted for the record were too lengthy for reprint. A copy has been retained by committee on file.]

TESTIMONY OF THE HONORABLE CLAUDINE SCHNEIDER BEFORE THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES, COMMITTEE ON APPROPRIATIONS -- MARCH 28, 1990.

Thank you Mr. Chairman. I am pleased to appear before this Subcommittee today to speak in support of the proposed International Trade Development Center for Aquatic Products. This Trade Center, which will be located at the University of Rhode Island (URI), has two primary objectives: to decrease this nation's annual trade deficit, and to generate increased incomes and employment opportunities in rural and coastal communities by promoting exports of fish and fishery products.

This nation's trade deficit in fish and fishery products was $6.6 billion in 1988 -- we imported $8.9 billion and exported only $2.3 billion. Fish and fishery products are this nation's third largest import, behind automobiles and electronics. In fact in 1988 we imported more fish than coffee, all vegetables, and all other meats combined. The deficit in fishery products accounted for 5% of the entire U.S. trade deficit. The Trade Center would address this nearly $7 billion trade deficit in four significant ways:

1) by assembling and analyzing data on international markets for the distribution of U.S. aquatic products;

2) by developing value added products and evaluating export opportunities;

3) by evaluating barriers and inefficiencies in the international marketing of U.S. aquatic products; and

4) by disseminating information to U.S. industries.

The benefits from establishing this nation's first International Trade Center for Aquatic Products are extensive. This is an opportunity to make United States industry more competitive -- specifically a segment of our economy which contributes nearly $7 billion to our trade deficit.

Aquaculture is a fast growing industry in the United States, and the opening of foreign markets will greatly enhance the industry. Aquaculture is now a $1.1 billion dollar business in the U.S., and 12% of all fish consumed here comes from fish farms. As aquaculture expands so to does the need for fish feed, which will be a boon to the United States grain industry which supplies that feed.

The Trade Center will have a regional focus by interacting with the aquaculture and fishing industries in the Northeast. The Trade Center, however, will be the only one in the United

States dealing exclusively with fishery products, and will, by its very nature have national significance.

URI is perfectly situated to be the home to this unique Trade Center. Rhode Island has a commercial fishing industry which contributes more than $3/4 billion annually to the state's economy. The Rhode Island fishing industry has led the nation in exporting fishery products to Japan, and this has been one of the brightest segments of the U.S. economy. In the 3rd Quarter of 1988 the U.S. exported $846 million in fish to Japan -- more than any other U.S. product. Rhode Island fishermen have been able to successfully market underutilized species of fish, such as squid, skate, mackerel, and butterfish, in both Japan and Western Europe. There are dozens of other species of abundant fish for which there is a limited domestic market but tremendous potential in foreign markets.

URI's Graduate School of Oceanography is internationally renowned, and has been designated by the National Oceanic and Atmospheric Administration (NOAA) as a Center of Excellence. The Northeast Region of NOAA Fisheries, has formally endorsed the establishment of this Trade Center at URI. Last year, a special Cooperative State Research Service (CSRS) Review Panel from the United States Department of Agriculture visited URI to assess the viability of locating the Trade Center there. The CSRS Review Panel concluded in their report:

> "The Review Panel strongly supports the creation of a Center for International Trade in Aquatic Products at the University of Rhode Island, with the Department of Resource Economics the lead unit. Such a Center fits well with the international reputation of the University of Rhode Island in fisheries and seafood products ... There is a potentially huge payoff from successful funding of a Center for International Trade in Aquatic Products."

The Trade Center will work cooperatively with the Northeast Regional Aquaculture Center (NERAC) located at Southeastern Massachusetts University in North Dartmouth, Massachusetts. NERAC strongly supports the establishment of the Trade Center at URI. Many of the functions that will be performed at the new Trade Center, such as marketing and trade information, will perfectly complement the activities of NERAC.

Aquaculture firms from around the U.S. are currently in fierce competition with foreign producers, for foreign as well as domestic markets. Norway, for example, will spend $9 million this year to promote their aquacultured salmon in U.S. and Japanese markets. The concept of this type of Trade Center is not new -- for the past decade Canada, Norway, Ireland and Scotland have funded their own international trade and market

analysis research for aquatic products. These investments have had tremendous payoffs for these countries. Although the U.S. is the largest producer of salmon in the world, imports of farmed salmon have increased steadily. In 1983, the U.S. imported $13.1 million worth of farmed salmon. In 1989 those imports had skyrocketed by over 800% to $108 million.

Section 1458A of the National Agricultural Research, Extension, and Teaching Policy Act of 1977, Public Law 95-113 as amended (7-USC 3291), sets the criteria for establishing international trade development centers. The two primary requirements for the grants to establish these centers are for 50% matching funds from the state or the university, and for the university to be a land-grant college. URI meets both of these criteria. The University is both a land-grant and a sea-grant college, and has its 50% of the funds already allotted by the State of Rhode Island. I am seeking an appropriation of $650,000 for FY 91 (a three year total of $1.95 million) as the Federal match to establish the Trade Center at URI.

On a second matter, I am seeking continued funding for another project at URI. Last year I appeared before this Subcommittee to request funds for a feasibility study for a new building at URI. Because of old outdated facilitates, and temporary quarters for a number of different departments at URI, a new building is essential. This Subcommittee agreed with my assessment and appropriated $30,000 for such a feasibility study. URI has proceeded at a rapid pace to develop plans for what will now be called the Coastal Institute on Narragansett Bay. The Institute will consist of a 80,395 square foot new building and 3,800 square feet of renovated laboratory space for a total of 84, 195 square feet. This new and renovated space will be located on the main campus of URI, along with a sister building to be funded by a state bond issue, which will be located on the Narragansett Bay Campus.

The Coastal Institute will be a multi-disciplinary project and will enhance URI's international reputation in marine science. The specific objectives of the Institute are:

1) to conduct and coordinate research on coastal lands and waters with the goal of understanding the scientific and social problems, and proposing solutions;

2) to provide a comprehensive educational program for the benefit of many, including university students, environmental organizations, government, industry, those charged with the regulation and management of the coastal zone, and the general public; and

3) to provide scientific, technical, management and policy

support to State and Federal agencies and the commercial sector on matters relating to the coastal zone.

The Institute will combine the expertise of URI's two campuses, and will work cooperatively with other universities, as well as with state and Federal agencies located adjacent to the university. Last week a four member Building Feasibility Review Team from the United States Department of Agriculture was at URI to assess the plans for the Institute. I understand that their reactions were overwhelmingly positive.

Mr. Chairman, I am seeking funding of $1.972 million for engineering and architectural design work and $5.741 million to fund the first-phase of construction. This is a total of $7.713 million in funding for FY 91. The total project cost of the Coastal Institute on Narragansett Bay will be $19.194 million.

Mr. Chairman, thank you for inviting me to testify before the Subcommittee today, and I urge all of the Members of the Subcommittee to support these two very important proposals.

# # # #

UNIVERSITY OF RHODE ISLAND - COLLEGE OF RESOURCE DEVELOPMENT

TESTIMONY - ROBERT MILLER

before the Subcommittee on Rural Development,

Agriculture and Related Agencies

March 28, 1990

The proposed building at the University of Rhode Island will help capture, for the rest of the nation, the unique contributions that are possible from a university which for over three decades has focused its attention on:

1) the sustainable productivity of marine/coastal production systems;

2) the transition to a more urban environment and the compatibility between rural/agricultural interests and urban values and concerns regarding the environment.

The University of Rhode Island is unique among land grant universities for the depth and breadth of its marine and marine-related programs and the study of marine and terrestrial ecosystems in coastal areas, the area in which two-thirds of the world's population is located.

The constraint on carrying out research and graduate training at the University of Rhode Island on coastal resource use issues including sustaining agriculture in an urbanizing environment is space. There is no space for scientists in the Department of Fisheries, Animal and Veterinary science to work on new aquaculture

systems or on evaluation of animal stress. There are demands for their pioneering research, but no facilities available. The current facility is scattered over five locations, all of which are inadequate for the work to be done. The Department of Natural Resources Science has a first rank geographic information system but because of lack of a suitable facility, it is not totally coordinated with the work of other departments. Their scientists are working on tracking groundwater pollution.

Faculty in the nationally regarded Department of Resource Economics are working on such issues as landfill siting, the economic impact of marine spills (including the recent tragedy in Alaska), irrigation/drainage in urban/coastal environments (including work in the San Joaquin Valley of California on the Kestersin drainage problem), fisheries product evaluation in Japanese and European markets and they have opportunities to have visiting scientists from the National Marine Fisheries Service on a long-term basis and from around the world on short-term assignments, but no space is available.

In summary, the past 30 years of focus on coastal environments at the University of Rhode Island and within the College of Resource Development has created a unique set of academic assets which are of value to the entire nation. The fruits of the labor to date will not be well realized without an expansion beyond the facilities currently available.

The proposed main campus building of the Coastal Institute on Narragansett Bay will provide facilities for the Department of

Fisheries, Animal and Veterinary Science, the Department of Resource Economics, elements of the Department of Natural Resources Science, and the Coastal Resource Center.

The overall program of the Coastal Institute on Narragansett Bay Main Campus building will focus on the development and productivity of natural and aquacultured fisheries systems within the coastal regions. Maintaining the integrity and natural productivity of fresh and marine water environments will also be an important feature. There will be substantial analyses of federal, state and local policies in relations to the use of coastal resources for maximum sustainable productivity. No other university in the country is in a position to assemble the mix of scientists and programs necessary to fully address the objectives of the Coastal Institute on Narragansett Bay.

WEDNESDAY, MARCH 28, 1990.

MIDWEST RESEARCH PROGRAMS

WITNESS

DR. RICHARD LOWER, MIDWEST WATER RESEARCH COALITION

Mr. WHITTEN. Next we will hear from Doctor Richard Lower.

Mr. LOWER. Chairman Whitten and members of the committee, it is indeed an honor to appear before you today to propose a new Midwest regional water quality research program.

My name is Richard Lower, and I am an Associate Dean and Director, University of Wisconsin College of Agriculture and Life Sciences. It is my privilege to represent a regional consortium of major Midwest research universities in the Great Lakes, Upper Mississippi and Ohio River basins in my testimony here today.

The consortium presently includes the Universities of Wisconsin, Minnesota, Iowa State, Purdue, Indiana, Missouri, and Ohio State. By unanimous vote of its institution presidents, it is seeking funding on a regional basis to complement research and educational initiatives presently underway and planned in national programs.

The proposed five-year program, with an initial fiscal year request of $5 million, would address unique regional problems relating to surface and groundwater contamination from pesticides and other agricultural chemicals, from on-site wastewater disposal, and landfill sites operated in rural areas.

This proposal would neither duplicate nor compete with recently-established national water quality research programs. Instead, it would complement these critically important programs by focusing on the unique features and rural research needs of this region.

The goal is to interface ongoing technical investigations with socio-economic policy and regulatory decision-making programs. This portion of the Midwest is one of the world's most productive agricultural regions, but its intensive agricultural activity poses severe threats to surface and groundwater supplies.

The Great Lakes contain 25 percent of the world's surface fresh water, and the region has impressive additional volumes of fresh water in other in-lakes and rivers and in groundwater reservoirs.

The Midwest leads the nation in local and State governmental activity aimed at protecting ground and surface water quality from agricultural and other sources.

These special features argue strongly for a unique regional effort.

The proposal would have its greatest impact in the development of public policy alternatives for decision making. Research presently being funded through the President's initiative on water quality is providing information on chemistry, physics, and biology of the nation's water resources. The program proposed would extend that research to the public policy decision-making arena.

In addition, new approaches to technology transfer must be devised so that highly-relevant and detailed water quality research findings can be shared effectively with policy makers and the public.

A generation of policy-applicable research and effective technology transfer systems means that new research disciplines must be brought to the water quality decisionmaking table. Economists, communicators, sociologists, educators, lawyers, and political scientists will interact with physical and biological scientists to integrate information and define policy options.

I can illustrate the need for these additional research efforts by citing the growing problem of pesticide contamination of drinking water in Wisconsin and its neighboring States. We have known for some time that pesticides are a problem when applied on sandy soils in regions where the water table is near the surface, but now we are learning that even herbicides such as atrazene pose a threat on heavier soils in areas where the water table is 30 to 60 feet below the surface. In these areas, both atrazene and metabolites are being found. Together, they exceed the standards.

This raises many questions of concern to State and Federal Government: how toxic are the metabolites? What are the economic and competitive impacts of an atrazene ban in Wisconsin and other Midwest States? If regulations must be applied, how can this be done with the least social and political discomfort? How should research data on these and other related questions be applied to the political process and communicated to the public?

These issues are as current and as urgent as the headline in tomorrow's paper. We strongly believe that this proposal can be an extremely valuable addition to the President's water quality research initiative and that it can help Midwestern States answer water quality protection questions of emerging national significance that will lead to intelligent and effective public policy decisions.

If this program is as effective as we think it will be, it should become a model for research programs that seek answers to water quality research questions in other regions.

It is imperative that we bring science into the decision making.

Thank you for your attention and for the opportunity to appear here today.

Mr. WHITTEN. Thank you very much. We appreciate your appearance.

[Dr. Lower's prepared statement follows:]

University of Wisconsin-Madison
College of Agrriculture and Life Sciences

Testimony
for
Subcommittee on Rural Development, Agriculture
and Related Agencies
U.S. House of Representatives

Concerning

The Midwest Water Research Coalition

Dr. Richard Lower, Associate Dean
March 28, 1990

TESTIMONY TO
RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS

My name is Richard L. Lower. I am Associate Dean and Director of the College of Agricultural and Life Sciences at the University of Wisconsin-Madison. I represent a Research Consortium of Midwestern Universities investigating water quality. The Universities are: Wisconsin-Madison, Minnesota, Iowa State, Purdue, Indiana, Missouri and Ohio State. We are seeking additional funding on a regional basis to complement research and education initiatives presently underway to assess ways to minimize surface- and ground-water quality deterioration due to contamination from agricultural use of chemicals; pesticide container disposal; on-site waste disposal; and from landfill sites operated in rural areas. It is intended to expand the consortium to include universities throughout the Great Lakes, Upper Mississippi and Ohio River Basins; the final grouping would encompass: Minnesota, Iowa, Missouri, Wisconsin, Illinois, Indiana, Michigan, Ohio, New York, Pennsylvania, West Virginia and Kentucky. The University of Wisconsin System would bring leadership and management to the program. The research/education program would depend on close ties being developed between the universities, research and education foundations, industry, state and local governments, environmental activist groups and the USDA through its Agricultural Research Service, Economic Research Service, and the Cooperative Extension Service. The region is located in a highly productive agricultural area with a sufficiency of available water but with an increasing deterioration in water quality. The water quality issue is fraught with public emotion throughout the area particularly with regard to the human health risks associated with contaminated water. Some states have surged ahead, with WI at the forefront, to enact independent groundwater quality protection legislation, sometimes with little consideration for the impacts on farming and state economies. The universities should be a conduit to ensure that the best science is brought to bear on the decision-making process. The final outcome, if this proposal is funded, should be the development of policy alternatives for a variety of water-quality issues which include assessments of the merits and disadvantages of each alternative. The effort should be buttressed by a strong public education program based on development of educational materials comprehensible to a diversity of audiences. Our goal is a program to complement ongoing midwest initiatives on water quality by bringing the issues to the forefront in policy and regulatory decisions.

The current Midwest Water Quality Initiatives contain three major efforts in research and education: 1. A program to evaluate the effects of agricultural management on water quality in several small subbasins which have specific problems related to the soils and geology of the area; 2. a research grants program which is funded at a low level--266 projects were prepared in 1989, of which only 46 could be funded; and 3. an outreach program which involves implementation of agricultural management practices on two watersheds in the region--sites in Wisconsin and Minnesota--where no funds were provided to monitor the before-and-after effects of the different management practices. These three initiatives are worthy programs in their own right, but do not go far enough in the interpretation of data to give it policy applicability. Our proposal is to enhance them so that science will be brought into the decision-

making process through a region-wide, multidisciplinary research program combined with strong information dissemination/technology transfer linkages.

The proposal is to devise and conduct a five-year research/technology-transfer program that will have immediate and long-term benefits for agriculture, industry and the environment in a region encompassing the Great Lakes, Upper Mississippi, and Ohio River Basins. Specific objectives will be to:

- Obtain federal support in FY 1991 for a Midwest Water Research Coalition that will include representatives from state and local governments, research universities, agriculture, industry, and environmental groups.
- Promote and support research on Midwestern water resources that will describe and analyze the chemical, physical, and biological processes which control the transport, transformation, and fate of chemical contaminants and to evaluate their toxicological significance.
- Devise strategies for pollutant reduction and detoxification.
- Develop analytical models and tools that will enable public officials to assess water-related environmental risks.
- Establish a region-wide committee of natural and social scientists and public officials that will evaluate proposed public policies for regulating the use of agricultural chemicals and waste disposal on the agricultural and industrial economies of the Midwest.
- Disseminate water quality information throughout the region to farmers, the general public, state and local government officials, agency administrators, industrial representatives and environmental groups using documents, lectures, town meetings, video tapes, maps and demonstrations, etc.
- Develop mechanisms for transferring technology from research findings in one region of the country to other climatic, geologic, and geographic settings.

These objectives complement and are totally compatible with the ongoing midwest initiatives. For example, the site evaluations for a variety of soil and geologic settings will provide the desperately needed data base on which to validate the predictive models mentioned in the objectives. These models must be capable of making thousands, even millions of decisions on the effective use and control of agricultural chemicals on a compound-specific, site-specific basis. To date, the data base on chemicals reaching water has been inadequate to the task of developing a clear understanding of chemical transport through soils to groundwater and overland to surface water, validation of the models themselves, and prediction of the rates of chemical transport under various management and climatic conditions. States have set or are currently setting standards for agricultural chemicals in potable water. The models must be capable of predicting whether the standards will be violated under certain combinations of climatic, geologic and management conditions. In areas where farmland is vulnerable to chemical transport, alternative but innovative management techniques are urgently needed, as well as criteria and methods to judge their efficacy.

To determine whether "best management techniques" are indeed appropriate we must devise effective sampling and monitoring protocols with a firm

statistical base which will tell us over the long term which management strategies are most effective. The proposal contained herein would be useful in developing statistically sound evaluation techniques capable of irrefutable proof that particular practices are successful. Each management technique must be judged on its merits, i.e., whether it is capable of sustaining adequate agricultural production with a just profit to farmers while enhancing environmental values. These criteria of management success must be stringently evaluated if farming is to show optimal returns.

Two other sectors that contribute to deteriorating water quality in rural environments are on-site sanitation facilities and waste disposal by landfilling. Little is known about the forms and amounts of nitrogen which reach groundwater from septic tanks. Speculation is rampant that substantial nitrate contamination of groundwater is derived from septic tanks, but little research has been conducted on transformations of nitrate to gaseous products in the lower horizons of soils. If current speculation is not countered by scientific investigation, then the size of housing lots containing single- or multiple-dwellings with on-site waste disposal systems will have to increase enormously, say from ¼-acre to 3-acre lots for single dwellings. This would increase urban sprawl and decrease the availability of high-quality farmland. These questions must be carefully researched to determine the real impact of septic tanks on groundwater quality. We also need a method for more rapidly determining when a septic system is likely to fail. Incursions of nutrients into waterbodies resulting in eutrophication of streams, rivers and lakes must be avoided. The transmission of microbial disease vectors by these failures is intolerable.

Rural areas are frequently the setting for landfill sites, and techniques used for waste disposal are positively archaic. A major problem in industrialized societies is the proper, safe and long-term handling of wastes and disposal through landfills, usually located in the rural environment. Waste disposal in landfills impacts everyone because all are direct or indirect waste generators and many suffer from the economic and health impacts of improper waste disposal. Clearly, waste minimization, reduction and beneficiation should be actively pursued; however, complete elimination is simply impossible. Therefore, construction of secure waste disposal sites with containment and collection of waste effluent that cannot be treated or until it can be treated becomes an important issue in evolving innovative management tactics. Waste containment systems currently include bottom liners, sideslope liners, covers and vertical barriers, and utilize earthen materials and geosynthetics. The purpose of these waste barriers is not merely control of water seepage: They must also restrict the escape of hazardous substances such as pesticides or volatile organic compounds in solution or in the vapor phase. Laboratory and field experience shows that some chemicals can affect the structural integrity of the most widely used liner material--soil. Hydraulic conductivity and its susceptibility to change with time or exposure to chemicals are factors impacting use of clay in waste-containment barriers. The current data base comprises mainly test results for simple monochemical systems and test programs that have extended over short time periods relative to the active life and post-closure security periods for most waste-containment and storage facilities. Research in multichemical systems is urgently needed with respect to suitability of barriers to waste leakage.

Waste containment technology in landfills is in dire need of innovative approaches to bring about another generation of barriers. Economic and

construction factors are often limiting in this respect. The feasibility of using improved designs and new materials as a substitute or amendment for soils needs to be investigated. The constructibility of liners, their cost-effectiveness, their interaction with mixed chemical systems, their performance in field circumstances, and the effects of time are significant research elements. Development of technologies for rapid detection of leakage and use of technologies such as reverse or electro-osmosis to concentrate contaminants or control solute transport across barriers are items of immediate concern.

Reliable toxicological assessments of chemicals in water are urgently demanded. The Federal Water Quality Act of 1987 first addressed the issue of toxicants in surface water at the national level and required that all states --under the guidance of the US-EPA--create standards or procedures for deriving criteria for individual toxic substances defining maximum permissible ambient concentrations in various categories of surface water. The legislation required states to promulgate rules and regulations to ensure that appropriate ambient water quality criteria for toxic substances be maintained. To this end, the states should regulate the input of individual toxic compounds from industrial and municipal sewage treatment plants by means of National Pollutant Discharge Elimination System (NPDES) permits. It allows states to create standards to safeguard against acute and chronic toxicity in receiving waters towards fish, other aquatic species, and even aquatic plants important for fish/aquatic organism habitat, as well as waterfowl and wildlife relying on the affected water for drinking and as sources of food. Beyond this, criteria must establish adequate protection for humans and domesticated animals using the water as sources of drinking water or fish for consumption. The contaminant level must preclude unnecessary risk of mutagenic, teratogenic, carcinogenic, neurological or immunosuppressive effects. Derivation of responsible criteria and control measures, which guarantee adequate levels of human and animal health and environmental protection, without undue social and economic stress on dischargers and the communities or industries they service, becomes an extremely complicated task requiring input from many scientific and technological disciplines.

Research is needed to determine the costs of water quality impairment along with associated legal and intergovernmental policy questions, e.g., estimates of costs of relocation, alternative water supplies, and remediation alternatives. Investigations must focus on developing new mechanisms of financing plausible policy options. This requires economic analysis of costs and benefits, especially as related to health issues. Economic evaluations of pollution impacts and costs of remedial actions are vital. Given the large social costs, measurement difficulties and human dislocations involved, indications are that management should largely be geared to finding protection strategies. In a more specific context, policy research should focus on development and testing of innovative management practices and policy instruments as they relate to source reduction and, as appropriate, transport mechanisms. In each instance economic evaluations are critical. To facilitate such inquiry, scientific research results should be translated into policy parameters applicable to state and local government intervention. These investigations should be linked to technology transfer and outreach activities. Analyses of existing programs will guide new policy implications and impact assessment.

Research is needed to develop a scheme of information and technology transfer on chemical impacts on water quality, and to facilitate its dissemination to a diversity of groups. Specifically it is necessary to: 1. Utilize an advisory council--in conjunction with program staff--to define and prioritize those resource areas requiring reevaluation by providing and disseminating alternative management schemes; 2. mount an information retrieval system on water resource management including scientific, technical, health, legal, social, economic and political considerations; 3. identify information gaps and research needs and conduct the research necessary to allow-rational development of resource management alternatives; 4. delineate alternative land use/management schemes and discuss the advantages and disadvantages of each; and 5. train students, technicians and leaders in the important elements of the research, information and technology transfer programs. Concomitantly, a student training scheme should be instituted to make the greatest use of the broad scope of expertise developed by both the research and technology transfer program.

A significant broadening in interdisciplinary education on water is needed and can be achieved through employment of undergraduate students as hourly workers or interns on research projects. These involvements bring extremely valuable insights to young students who have never confronted the complexity of environmental issues in the real world and who may redirect their energies and future professional involvements towards water quality problems. Graduate students working toward advanced degrees and post-doctoral researchers become part of the critical pool of professionals to fill positions in universities, government, industry, and private and public research institutes. Students at all degree levels should be oriented towards career positions, especially those in the public sector where the need is greatest.

To be effective, each research initiatives must be placed into a regional and eventually national context. The proposal requests additional federal funding to complement ongoing initiatives in the midwest and other parts of the country which cannot be addressed with present funding levels. It is urgent that we get sound, scientific advice from the research community into the nation's decision-making procedures on water quality issues; in this way we can avoid the potential blunders caused by making decisions on a purely emotional basis.

The fiscal note accompanying this request would be for $5 million of funding in FY 1991 with an annual incremental increase of 10% for the succeeding four years. In time, this model could be replicated in other regions of the country.

WEDNESDAY, MARCH 28, 1990.

MIDWEST PLANT BIOTECHNOLOGY

WITNESS

DR. ROD TOWNSEND, MIDWEST PLANT AND BIOTECHNOLOGY CONSORTIUM

Mr. WHITTEN. Now we will hear from Doctor Rod Townsend.

Your complete statement will appear in the record immediately following your presentation.

Dr. TOWNSEND. Thank you. Mr. Chairman, thank you for the opportunity to testify today.

My name is Rod Townsend, and I am the Regulatory Affairs Manager for Pioneer H-Bred International. Pioneer is the largest seed company in the world, and we are based in Des Moines, Iowa, in the middle of the Midwest. It is my pleasure to speak today on behalf of the Midwest Plant Biotechnology Consortium, of which Pioneer Hi-Bred is a member.

Congress appropriated $1.75 million for the Consortium's biotechnology research and transfer program in 1988, and a further $2.625 million in 1989. On behalf of the Consortium's 31 corporate members and 20 member university and Federal research institutes I express our sincere appreciation for your support.

I am here today not only because Pioneer is an enthusiastic supporter of the Consortium, but also because I believe that the American farmer will come to rely increasingly upon advances in biotechnology to maintain his competitiveness in an increasingly competitive global agribusiness.

Through my experience in biotechnology research in the public sector and lately in industry, I have come to see technology transfer as one of the key factors that will determine the success of our agricultural biotechnology industry.

The Midwest Plant Biotechnology Consortium is a pivotal organizational mechanism that links key players in plant biotechnology and coordinates their activities to bring about an efficient transfer of new technologies from the laboratory to the marketplace.

Industry's support for the consortium can be seen in its allocation of funds for quality research projects started in 1989. Thirteen companies made financial commitments, totaling over $700,000. Expectations are that the commitment will be significantly higher for the coming round of grants.

These corporate commitments increase the effectiveness and impact of Federal research dollars. Continued cooperation of industry and the Federal Government in the area of plant biotechnology will ultimately strengthen American agribusiness through advances in production and quality achieved in a sound environmental context.

State and private institutions have also been active supporters of the Consortium's research and technology transfer program and have made financial commitments to over $1 million to projects initiated in 1989.

Total funding for all sources for the Consortium's 1989 and 1990 research program, including $1.7 million from USDA, is $3.5 million.

Last year, 15 research projects were funded through the Consortium. All were supported by matching funds from industry, State agencies, and nonprofit organizations, all of whom were interested in specific areas of study relating to major crops on which the agriculture of this nation depends.

Projects funded in 1989 included several aimed at controlling diseases and pests that reduce crop productivity, as well as improving the efficiency of enzymes used in producing high-fructose corn syrup, mapping genes contributing to higher yields and nutritional value, and developing methods of transferring those genes into crop plants.

In addition, three Midwest Plant Biotechnology Consortium graduate fellowships were awarded to train the future experts in the application of biotechnology. Members of the Consortium strongly support this initiative. We are all acutely aware that the availability of skilled personnel may become a limiting factor in commercializing biotechnology.

Industrial funds, plus the $2.625 million appropriated by Congress, will be used to continue the projects begun in 1989 into a second year so that they may reach their objectives.

We are here to thank you for your support that you have already given us and to request a special grant for $5 million to enable those important projects selected for funding in this year's rigorous competition to be continued for a second year and so that exciting, new projects can be begun in 1991.

Speaking on behalf of my industrial colleagues, we feel that the Midwest Plant Biotechnology Consortium's Program is integral to creating a competitive advantage for United States agriculture through plant biotechnology. We urge Congress to continue its support for the Consortium, thereby helping to ensure the future success of American crops and maintaining United States competitive position in a global marketplace.

I thank you very much for the opportunity to testify.

Mr. WHITTEN. Thank you very much for your appearance. May I say again that our problem is the budget, and Gramm-Rudman, and budget limitations, and all those kind of things. Being on this subcommittee, for years, we have a great appreciation for the needs of agriculture, but we have all sorts of limitations about what we can do in view of the trade deficit and other things. But we will do the best we can. Thank you very much.

Dr. TOWNSEND. Thank you for your time.

[Dr. Townsend's prepared statement follows:]

MIDWEST PLANT BIOTECHNOLOGY CONSORTIUM
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TESTIMONY

Subcommittee on Rural Development, Agriculture, and Related Agencies

Committee on Appropriations

House of Representatives

March 28, 1990

SUMMARY OF REQUEST: The Midwest Plant Biotechnology Consortium supports competitive projects in the North Central States for research in plant biotechnology. The Consortium requests $5 million in FY 1991 to support the continuation of projects started in 1990 and new starts in 1991.

Dr. Rod Townsend
Regulatory Affairs Manager
Plant Breeding Division
Department of Biotechnology
Pioneer Hi-Bred International, Inc.
7300 Northwest 62nd Avenue
Johnston, IA 50131
(515) 270-4146

Mr. Chairman, thank you for the opportunity to testify. My name is Rod Townsend and I am the Regulatory Affairs Manager, Plant Breeding Division, at Pioneer Hi-Bred International, Inc. Pioneer Hi-Bred is the largest seed company in the world, and is based in Des Moines, Iowa. I am speaking on behalf of the Midwest Plant Biotechnology Consortium, of which Pioneer Hi-Bred is a member.

In its appropriations act for fiscal 1989, the Congress appropriated $1.75 million for the biotechnology research and technology transfer program of the Midwest Plant Biotechnology Consortium, an industry-university-federal laboratory consortium. Then for fiscal 1990, Congress appropriated $2.625 for the Consortium. On behalf of the Consortium's 31 corporate members, and 20 member university and research institutes, I express our appreciation for your support. We have submitted a management proposal for the use of the 1990 funds to the USDA, and expect approval soon. Officials of the Department have been most helpful and cooperative.

Plant biotechnology has the potential for invigorating and diversifying the agricultural economy. The goal of the Midwest Plant Biotechnology Consortium is to bring together industry, universities, and federal laboratories to conduct research in plant biotechnology to 1) utilize agricultural products as new sources of chemicals, pharmaceuticals, and energy; 2) reduce the cost of crop production; 3) improve utilization of existing crops; and 4) develop an agriculture that is safer in its impact on the environment.

The concept behind the Consortium has been enthusiastically supported by industry, universities, and federal laboratories alike. All parties involved see new technology as a key component in the success of American competition in global agribusiness.

The commitment of industry to the Consortium's work can be seen easily by its allocation of funds for the excellent innovative research projects started in 1989. The matching of federal money with industry funds signifies an appreciation by both parties that the program works and benefits everyone. The companies that have made financial commitments totaling over $700,000 to the 1989-1990 Consortium research program include Abbott Laboratories, Dow Chemical Company, DowElanco, E.I. DuPont, Eli Lilly and Company, Lipha Chemicals, Monsanto Company, Native Plants, Northrup King Research Center, Novo Laboratories, Pioneer Hi-Bred International, Inc., Quaker Oats Company, and Rohm & Haas. Four companies have contributed to two or more research projects. These corporate commitments increase the effectiveness and impact of federal research dollars. The continued cooperation of industry and the federal government

in this program will contribute to the economic strength of agriculture in the United States.

State governments and private foundations have also been very active in supporting the Consortium research and technology transfer program, and have made financial commitments of over $1 million to the Consortium projects initiated in 1989.

The total funding from all sources for the Consortium's 1989-1990 research and technology transfer program is $3.5 million, including the $1.75 million USDA appropriation.

As a result of company interactions with academic scientists at Consortium-sponsored meetings, many companies have established on-going dialogues with university and federal laboratory scientists. Some of these have resulted in funding for additional plant biotechnology research projects. The Consortium encourages and facilitates these interactions. These spin-off projects further leverage the federal funds of the Consortium.

In 1989, 15 research projects were funded through the Consortium. Nine projects deal with diseases and pests which reduce crop productivity. These projects are designed to lessen crop losses and reduce the amounts of agricultural chemicals used to fight pests. Reduced dependency on agrichemicals will improve the environment in areas such as ground water. The reduced chemical use should also decrease farmers' crop production costs.

Two Consortium projects involve investigating modifications to industrially useful enzymes. This research will help expand markets for crops by improving the efficiency of making high-fructose corn syrup. It could also increase the quantity of industrially important enzymes in crops.

Four projects are for gene mapping or gene transfer in agricultural plants. This research seeks to improve the nutritional value of crops and other critical traits and to understand better the basic genetic processes in crops grown in the Midwest.

The Consortium is the organizational mechanism that links players in plant biotechnology and coordinates their functions in order to bring about the efficient transfer of new knowledge and new technologies from the laboratory to the marketplace. The program is relatively young, but has received high marks by both industry and universities since its inception. The benefits derived from the work of the Consortium will not be realized unless the research progresses to the point where new projects and processes can be tested in the field. We urge Congress to continue to

support the program's contributions to the future success of American crops and to the United States' position in the global marketplace. Agricultural exports continually show a positive trade balance.

The fiscal 1990 appropriation of $2.625 million will be used to continue existing projects for a second year and to start new projects. A rigorous review and competition for new projects is already in progress.

We are here to thank you for the support you have provided in the past, and to request that the appropriation to the Consortium be increased to $5 million so that the research program can grow and so that current projects can be continued. Speaking on behalf of my industrial colleagues, we feel that the Consortium's program is critical in helping to keep United States agriculture competitive in global markets.

Thank you very much for this opportunity to testify.

WEDNESDAY, MARCH 28, 1990.

COMPETITIVE RESEARCH GRANTS

WITNESS

HON. FRANK McCLOSKEY, A U.S. REPRESENTATIVE FROM THE STATE OF INDIANA

Mr. WHITTEN. Next is the Honorable Frank McCloskey.

We are mighty glad to have you, sir.

Mr. MCCLOSKEY. Thank you, sir. Good to see you today.

Mr. WHITTEN. We are glad to hear from you.

Mr. MCCLOSKEY. Thank you, Mr. Chairman. Thank you for your cooperation and generosity in allowing me to appear today.

I do have a formal statement which has been submitted to staff. I would ask that that be accepted for the record.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

Mr. MCCLOSKEY. In respect for your time, I will try to highlight, prioritize, and focus on the most important aspects of this statement.

I take full note of your comments to the previous witness about the problems of budget constraints and Gramm-Rudman and that sort of thing, but I know with your experience, Mr. Chairman, probably no one knows better than you the state of agricultural research in this country and the need for more agricultural research to keep the American farmer, agribusiness, and our overall national economy strong and improving.

You know right now that there is only about $50 million expended annually in agricultural research competitive grants programs.

In order to summarize, I would just like to say that in 1989 I submitted legislation for consideration to substantially increase the allocations for competitive agricultural research grants to the tune of $500 million. I was heartened to see that President Bush, in his recent budget submission, did call for a significant increase from $50 million to $100 million. But I think it is well-known and we have good testimony from the American Farm Bureau and various scientists and agricultural experts at Purdue University and many places otherwise as to the need for such legislation.

I would note that my legislation focuses on six areas of competition encompassing the broad gamut of the agricultural sector. They include: plant systems; animal systems; nutrition food quality and health; natural resources and the environment; engineering products and processes; and market, trade, and agricultural policy.

The President's initiative is similar, but it leaves two of those areas out, including engineering products and processes and markets, trade, and policy.

There would be a peer review committee established within the Department of Agriculture of 15 experts or so to decide and review on the applications nationally. And I would note that in no way would this, as we see it, cut into existing programs.

The legislation contains sense-of-the-Congress language. For example, it should not be taken out of other areas of the agriculture

budget such as market prices unless there were to be a definite increase in market prices.

So with that—you have my statement for the record, Mr. Chairman. I thank you again for your cooperation.

Mr. WHITTEN. We appreciate very much your interest here. We are interested in research, too. We do get into arguments as to whether this is special research where we review it annually or whether it is competitive research where it is under the control of others. We have to go to the floor and defend what we do, and I don't know whether they have proper supervision. You might be interested in knowing that a whole lot of the universities that we had on competitive research spent half of it for administration. Some of them spent all of it for administration. So we put a limit of 25 percent for administration. It saved about $3 or $4 million for research rather than for the universities.

That is not limited to a single university, but all of them are like that. They can use all the money they can get.

So we have the responsibility of trying to see that what we spend will bring results so we can justify it on the floor when we ask for money.

I don't know what we are going to do with the Office of Budget Management. They have proposed this increase, but they have asked us to cut appropriations for agriculture by $1,400,000,000 at a time like this with all the inflation we have got. We have to do the best we can.

Mr. MCCLOSKEY. I would just say that this is a priority area. I might say, as to your concerns as to administration and expenses——

Mr. WHITTEN. I'm not going to ask you, but a whole lot of these universities get a whole lot of endowments, but they are asking the Federal Government to pick up the check.

Mr. MCCLOSKEY. Well, we are concerned for poor universities in the Midwest and in the South, Mr. Chairman.

Mr. WHITTEN. We would like to see it all spent wisely. We believe in research.

Mr. MCCLOSKEY. Yes, sir.

Mr. WHITTEN. Thank you very much.

Mr. MCCLOSKEY. Thank you.

[Mr. McCloskey's prepared statement follows:]

STATEMENT OF CONGRESSMAN FRANK McCLOSKEY

HOUSE APPROPRIATIONS SUBCOMMITTEE ON

RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

March 28, 1990

I WOULD LIKE TO THANK CHAIRMAN WHITTEN FOR ALLOWING ME TO TESTIFY TODAY ON THE SUBJECT OF AGRICULTURAL RESEARCH.

MR. CHAIRMAN, EXISTING AGRICULTURAL RESEARCH PROGRAMS HAVE CREATED MUCH OF THE ECONOMIC FOUNDATION OF OUR SOCIETY.

AS THE SUBCOMMITTEE KNOWS, OVER THE PAST SEVERAL DECADES FEDERAL FUNDING FOR AGRICULTURAL RESEARCH HAS SHOWN NO GROWTH OTHER THAN MATCHING INFLATION. IN 1965, THE USDA RESEARCH BUDGET HAD THE PURCHASING POWER OF $788 MILLION IN 1982 DOLLARS; THE 1988 RESEARCH BUDGET WAS VALUED AT $778 MILLION IN 1982 DOLLARS.

OF THESE FUNDS, LESS THAN $50 MILLION WAS IN THE FORM OF COMPETITIVE GRANTS. COMPETITIVE GRANTS, BY THEIR VERY NATURE, SEEK OUT THE CONTRIBUTIONS THAT ALL SCIENTISTS AND AREAS OF SCIENCE CAN MAKE TO ADVANCE THE KNOWLEDGE AND TECHNOLOGY THAT WILL IMPACT AGRICULTURAL MARKETING, PRODUCTION, AND COMPETITIVENESS.

THE IMPORTANCE OF AGRICULTURE IN OUR OWN ECONOMY AND TO U.S. INTERNATIONAL COMPETITIVENESS WARRANTS A RENEWED COMMITMENT TO THE DEVELOPMENT OF NEW TECHNIQUES AND PRODUCTS AND TO THE PURSUIT OF INNOVATIVE MARKET USES FOR AGRICULTURAL PRODUCTS. COMPETITIVE GRANTS WOULD AUGMENT EXISTING PROGRAMS AND ALLOW FOR FURTHER GROWTH.

LAST FALL, I INTRODUCED H.R. 3806, THE COMPETITIVE AGRICULTURAL RESEARCH GRANT ACT OF 1989, WHICH PROVIDES FOR A NEW $500 MILLION FEDERAL INITIATIVE TO ESTABLISH AN IMPROVED AND EXPANDED PROGRAM OF COMPETITIVE GRANTS FOR AGRICULTURAL, FOOD, AND ENVIRONMENTAL RESEARCH.

THE LEGISLATION WAS DEVELOPED IN CONJUNCTION WITH RECOMMENDATIONS MADE BY THE NATIONAL ACADEMY OF SCIENCES BOARD OF AGRICULTURE NATIONAL RESEARCH COUNCIL IN INVESTING IN RESEARCH, A 1989 PROPOSAL TO STRENGTHEN THE NATIONAL AGRICULTURAL, FOOD, AND ENVIRONMENTAL SYSTEMS.

H.R. 3806 WOULD ESTABLISH SIX HIGH-PRIORITY RESEARCH FIELDS: PLANT SYSTEMS; ANIMAL SYSTEMS; NUTRITION, FOOD QUALITY, AND HEALTH; NATURAL RESOURCES AND THE ENVIRONMENT; ENGINEERING, PRODUCTS, AND PROCESS; AND MARKET, TRADE, AND AGRICULTURE POLICY. THE FUNDING IS DIVIDED INTO THREE AREAS--INSTITUTIONAL STRENGTHENING GRANTS, SINGLE RESEARCHER GRANTS, AND GRANTS TARGETED AT TEAMS OF

RESEARCHERS FROM DIFFERENT SCIENTIFIC FIELDS.

THE PRESIDENT'S BUDGET PROPOSAL FOR FISCAL YEAR 1991 REQUESTS $100 MILLION FOR COMPETITIVE RESEARCH GRANTS AS A NATIONAL INITIATIVE FOR AGRICULTURAL RESEARCH. THIS WOULD EXPAND THE CURRENT USDA COMPETITIVE GRANTS PROGRAM BY ABOUT $57 MILLION OVER THE FY 1990 APPROPRIATION.

THE PRESIDENT'S PROPOSAL, HOWEVER, OMITS TWO OF THE PROGRAM AREAS RECOMMENDED IN THE NATIONAL ACADEMY OF SCIENCES REPORT. THESE ARE THE FIELDS OF ENGINEERING, PRODUCTS, AND PROCESSES AND OF MARKETS, TRADE, AND POLICY. RESEARCH IN THESE TWO FIELDS WILL BE CRUCIAL TO ENSURE AMERICAN COMPETITIVENESS AS WE APPROACH THE NEXT CENTURY.

OF THE $550 MILLION H.R. 3806 AUTHORIZES, TEN PERCENT IS EARMARKED FOR RESEARCH PROGRAM DEVELOPMENT GRANTS, INCLUDING PRE- AND POST-DOCTORAL FELLOWSHIPS, AND 40% IS EARMARKED FOR MULTIDISCIPLINARY RESEARCH TEAMS. GRANTS MAY BE MADE FOR PERIODS NOT TO EXCEED FIVE YEARS, AND THERE IS SENSE OF CONGRESS LANGUAGE THAT THE FUNDS SHOULD NOT COME FROM COMMODITY PAYMENTS, UNLESS A SAVINGS IS REALIZED ON THESE PAYMENTS DUE TO RISING MARKET PRICES. THESE EARMARKS WERE INCLUDED TO MAKE ELIGIBLE INSTITUTIONS WHICH MAY NOT HAVE HAD AN EXTENSIVE AGRICULTURAL RESEARCH PROGRAM IN THE PAST.

GIVEN HIGH BUDGET DEFICITS AND THE NEED FOR FISCAL RESTRAINTS, I REALIZE THAT NEW FEDERAL OUTLAYS ARE HARD TO JUSTIFY. HOWEVER, AGRICULTURAL RESEARCH HAS PRODUCED AN ANNUAL RETURN OF MORE THAN 45%. IN ADDITION, THE DEVELOPMENT OF NEW CROP AND ANIMAL STRAINS, FARMING TECHNIQUES, AND MARKET USES FOR AGRICULTURAL PRODUCTS WILL BENEFIT ALL SECTORS OF THE AMERICAN ECONOMY.

TRADE IN AGRICULTURAL PRODUCTS IS AN IMPORTANT ASSET FOR THE UNITED STATES IN INTERNATIONAL BALANCE OF PAYMENTS CALCULATIONS. U.S. PREEMINENCE IN AGRICULTURAL TRADE HAS FACED SEVERE GLOBAL COMPETITION DURING THE PAST DECADE AS ADVANCES IN AGRICULTURAL PRODUCTION HAVE SPREAD. IN THE FUTURE, WE WILL FACE A SUBSTANTIVELY MORE COMPETITIVE ENVIRONMENT.

OUR ABILITY TO COMPETE IS DIRECTLY RELATED TO THE EDGE WE HAVE IN SCIENCE AND TECHNOLOGY. LAND, LABOR, AND CAPITAL ALONE WILL NO LONGER PROVIDE OUR AGRICULTURAL COMPETITIVE ADVANTAGE. RESEARCH, ESPECIALLY COMPETITIVE GRANTS WHICH STIMULATE INNOVATION, IS AN INVESTMENT IN OUR FUTURE.

THE SCIENTIFIC COMMUNITY HAS STRONGLY ENDORSED H.R. 3806, AS HAVE REPRESENTATIVES OF THE AMERICAN FARM BUREAU FEDERATION. AT A PREVIOUS HEARING BEFORE THE AGRICULTURE SUBCOMMITTEE ON DEPARTMENT OPERATIONS, RESEARCH, AND

FOREIGN AGRICULTURE, VICTOR LECHTENBERG, EXECUTIVE ASSOCIATE DEAN OF AGRICULTURE AT PURDUE UNIVERSITY, SUBMITTED TESTIMONY EXPRESSING HIS CONCERN ABOUT THE FUTURE OF AMERICAN AGRICULTURAL RESEARCH. TO QUOTE: "CURRENT COMPETITIVE GRANTS ARE TOO SMALL, FOR TOO SHORT A TIME, AND SIMPLY NOT AVAILABLE IN SEVERAL CRITICAL RESEARCH AREAS. . . . THE JOB MARKET IS VERY STRONG FOR AGRICULTURAL GRADUATES WITH A B.S. DEGREE. WE CURRENTLY DO NOT HAVE ENOUGH AMERICANS PURSUING GRADUATE STUDIES IN AGRICULTURAL SCIENCES TODAY TO REPLACE THE SCIENTISTS WHO WILL RETIRE OVER THE NEXT FIVE YEARS. . . . THE PROGRAM PROPOSED BY H.R. 3806 WILL HELP OVERCOME THESE INADEQUACIES."

AMERICAN FARMERS CAN COMPETE. CONTINUED RESEARCH WILL ENSURE THAT U.S. AGRICULTURE REMAINS HIGHLY PRODUCTIVE, THAT COMMODITIES REMAIN NUTRITIOUS AND SAFE, AND THAT NEW MARKET USES ARE DEVELOPED. THE GRANT PROGRAM WHICH H.R. 3806 SEEKS TO ESTABLISH IS A DIRECT INVESTMENT IN OUR NATION'S FUTURE.

A COMPETITIVE GRANT PROGRAM WILL COMPLIMENT EXISTING RESEARCH PROGRAMS AND I AM HOPEFUL THAT THE 1990 FARM BILL WILL INCLUDE A STRONG AND VIABLE COMPETITIVE RESEARCH COMPONENT WHICH IS FUNDED BY NEW MONEY.

THANK YOU.

WEDNESDAY, MARCH 28, 1990.

INSTITUTE OF BIOSCIENCES AND TECHNOLOGY

WITNESS

DR. TIMOTHY SHAUNTY, THE TEXAS A&M UNIVERSITY SYSTEM

Mr. WHITTEN. Next we will hear from Doctor Timothy Shaunty.

Dr. SHAUNTY. Chairman Whitten and Mr. Watkins, my name is Tim Shaunty. I am the Assistant Deputy Chancellor for the Agricultural Programs at Texas A & M University. I am here to appear on behalf of our request for construction funds to complete the Institute of Biosciences and Technology, a building that is being constructed in the Texas Medical Center.

I would like to express my appreciation for the previous appropriations that this committee has given totaling $4.25 million. We are requesting at this time an additional $8.25, which would be a total of $12.5 million toward the completion of the $27 million tower.

This is, in fact, a one-time request, Mr. Whitten, for the construction. To support that, the State of Texas has appropriated $7.5 million for operations on this biennium, with a pledge to continue it, and we have raised approximately $17 million in private support, $10 million of which is going to the construction and $7 million to endow the research programs that will be going on.

The Institute is designed to bring about a collaboration between the research institutions of the Texas Medical Center, the largest medical research composition in the world, and the College of Agriculture, Veterinary Medicine, and Life Sciences at Texas A&M.

I have submitted in detail a statement supporting this request. I did want to highlight the points that we are doing and, more than anything else, make you aware that we have substantiated the one-time request for the construction. This is not something we will be coming back for operating funds. We feel that once this Institution is up and running and is operational, the collaborative efforts between research and agriculture and medicine will have definite potential industrial spin-offs and be a money maker for the U.S. Government.

While it is located in Houston, we do believe it will be a national resource, and we certainly would like to ask your favorable consideration of this request.

Mr. WHITTEN. Thank you. You have heard the statements I have made about our problem here.

Dr. SHAUNTY. Yes, sir.

Mr. WHITTEN. We are going to do the best we can, but I don't know just how much we can do. We are limited by all these problems and all of this investment. I have personally urged that we change the rules of the House where investment spending is not combined with that which is for current benefits.

Dr. SHAUNTY. Yes, sir.

Mr. WHITTEN. I don't know how much luck we are going to have with that.

We do appreciate your being here. We know the value of Texas A&M and the State of Texas in connection with all of this work.

Thank you very much.
Dr. SHAUNTY. Thank you, sir.
[Dr. Shaunty's prepared statement follows:]

WRITTEN TESTIMONY

BY

TIMOTHY L. SHAUNTY

ASSISTANT DEPUTY CHANCELLOR FOR AGRICULTURE

THE TEXAS A&M UNIVERSITY SYSTEM

BEFORE

THE HOUSE APPROPRIATIONS SUB-COMMITTEE

ON

AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES

WASHINGTON, D.C.

MR. CHAIRMAN, MY NAME IS TIM SHAUNTY AND I AM THE ASSISTANT DEPUTY CHANCELLOR FOR THE AGRICULTURAL PROGRAMS FOR THE TEXAS A&M UNIVERSITY SYSTEM. MY PURPOSE TODAY IS TO REQUEST ADDITIONAL SUPPORT FOR CONSTRUCTION OF A FACILITY TO HOUSE THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY, A COMPONENT OF TEXAS A&M UNIVERSITY THAT WILL BE LOCATED IN THE TEXAS MEDICAL CENTER AT HOUSTON.

I WOULD LIKE TO FIRST EXPRESS MY APPRECIATION FOR THE PREVIOUS SUPPORT THAT CONGRESS HAS PROVIDED, $50,000 IN FY88 FOR FEASIBILITY STUDY, $1.25 MILLION IN FY89 FOR CONSTRUCTION, AND $3 MILLION IN FY90 FOR CONSTRUCTION. OUR INITIAL REQUEST WAS FOR $12.5 MILLION IN MATCHING FUNDS RESULTING IN A REQUEST THIS YEAR FOR THE $8.25 MILLION REMAINING.

SINCE THE GROUND BREAKING IN JANUARY OF 1989, THE FACILITY HAS PROGRESSED TO WHERE "TOPPING OUT" CEREMONIES WILL OCCUR THIS FRIDAY, COMMEMORATING THE CREATION OF THE SKELETON STRUCTURE OF THE ELEVEN STORY BUILDING. WE HAVE BEEN EXTREMELY AGGRESSIVE IN THE PRIVATE CAPITAL CAMPAIGNS EFFORT TO SUPPORT THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY. AT THIS TIME WE HAVE APPROXIMATELY $17 MILLION PLEDGED OVER THE NEXT FIVE YEARS. OF THIS SUM, APPROXIMATELY $10 MILLION IS FOR CONSTRUCTION WITH THE REMAINING BEING DESIGNATED FOR ENDOWMENT SUPPORT OF THE RESEARCH PROGRAMS.

THE TEXAS MEDICAL CENTER, A WORLD LEADING RESEARCH CENTER WITH OVER $200 MILLION IN SPONSORED RESEARCH ANNUALLY, HAS BEEN A WILLING PARTNER IN THE PROGRAM DEVELOPMENT OF THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY. THIS INSTITUTE IS DESIGNED TO BRING THE RESOURCES OF THE TEXAS A&M UNIVERSITY SYSTEM INTO PLAY WITH THE EXISTING TEXAS MEDICAL CENTER. IT IS A UNIQUE OPPORTUNITY TO MELD AGRICULTURE AND VETERINARY SCIENCES WITH THE HUMAN RESEARCH EFFORTS OF THE TEXAS MEDICAL CENTER. AS HAS BEEN PREVIOUSLY PRESENTED, THE COLLABORATIVE EFFORTS BETWEEN THE VARIOUS INSTITUTIONS OF THE TEXAS MEDICAL CENTER AND THE TEXAS A&M UNIVERSITY SYSTEM WILL BE SIGNIFICANTLY ENHANCED BY THE PHYSICAL LOCATION OF THE STRUCTURE IN HOUSTON. SPECIFICALLY, THE FOLLOWING MAJOR INSTITUTIONS HAVE BEEN IDENTIFIED AND HAVE PARTICIPATED IN THE PLANNING OF COLLABORATIVE PROGRAMS:

(1) THE UNIVERSITY OF TEXAS SYSTEM CANCER CENTER, MD ANDERSON HOSPITAL AND TUMOR INSTITUTE

(2) THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER IN HOUSTON

(3) BAYLOR COLLEGE OF MEDICINE

(4) RICE UNIVERSITY

(5) UNIVERSITY OF HOUSTON

(6) TEXAS SOUTHERN UNIVERSITY

(7) THE USDA CHILDRENS NUTRITION RESEARCH CENTER.

THE PROGRAMS FROM THE TEXAS A&M UNIVERSITY SYSTEM THAT WILL INITIALLY BE INVOLVED IN THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY

COME FROM THE COLLEGES OF AGRICULTURE AND LIFE SCIENCES, VETERINARY MEDICINE, SCIENCES, AND ENGINEERING FROM TEXAS A&M UNIVERSITY. IN ADDITION, THE TEXAS AGRICULTURAL EXPERIMENT STATION WILL HAVE A SIGNIFICANT RESEARCH INVESTMENT IN THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY ALONG WITH TEXAS ENGINEERING EXPERIMENT STATION. THE PUBLIC EDUCATION AND TECHNOLOGY TRANSFER COMPONENT OF THE INSTITUTE WILL INCLUDE PARTICIPATION OF THE TEXAS AGRICULTURAL EXTENSION SERVICE.

AS FORMAL COLLABORATION EFFORTS ARE IDENTIFIED AND AGREED UPON, RESOURCES OF THE TEXAS A&M UNIVERSITY SYSTEM, HAVE BEEN PLEDGED TO INSURE THAT THE PROGRAMS ARE SUPPORTED.

WHEN THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY WAS INITIALLY CONCEIVED, A SCIENTIFIC ADVISORY BOARD OF DISTINGUISHED SCIENTISTS AND RESEARCH ADMINISTRATORS FROM ACROSS THE COUNTRY WERE BROUGHT TOGETHER TO HELP FORMULATE BROAD GOALS AND OBJECTIVES OF THE INSTITUTE. SPECIFIC PROGRAMS THAT HAVE BEEN IDENTIFIED AND REMAIN AS THE BASIC GOALS OF THE INSTITUTE ARE AS FOLLOWS:

(1) STRENGTHEN ON-GOING COLLABORATIVE RESEARCH BETWEEN SCIENTISTS IN AGRICULTURE, AND MEDICINE

(2) TO STIMULATE NEW RESEARCH INITIATIVES AND ALLOW NATIONAL COLLABORATION BY RECRUITING KEY SCIENTISTS ENGAGED IN MULTIDISCIPLINARY RESEARCH FOR BOTH THE MEDICAL COMMUNITY AND AGRICULTURE

(3) PROVIDE A FORUM FOR EXCHANGING IDEAS BETWEEN THE AGRICULTURAL AND MEDICAL RESEARCH COMMUNITIES

(4) ASSIST IN THE TECHNOLOGY TRANSFER FROM THE LABORATORY TO THE MARKET PLACE.

WHILE THIS CENTER WILL BE A COMPONENT OF THE TEXAS A&M UNIVERSITY SYSTEM AND IS LOCATED IN HOUSTON WITHIN THE TEXAS MEDICAL CENTER, OUR GOAL IN ESTABLISHING THE INSTITUTE IS TO INSURE THAT IT BECOMES A NATIONAL RESOURCE AND CAPITALIZE ON THE OPPORTUNITIES CURRENTLY AVAILABLE THROUGH THE BREAKTHROUGHS IN BASIC BIOLOGY. WE BELIEVE THIS NATIONAL RESOURCE WILL BE OF INESTIMABLE VALUE IN A VERY SHORT TIME BASED ON THE FOLLOWING:

(1) THE GROWING PROBLEM OF METABOLIC AND DIET RELATED DISEASE ALONG WITH THE INCREASING COST OF THIS PROBLEM

(2) THE OPPORTUNITIES FOR SHARING COMPLIMENTARY SCIENTIFIC CAPABILITY BETWEEN MEDICAL, AGRICULTURAL, AND ENGINEERING INSTITUTIONS TO PROVIDE CREATIVE SOLUTIONS TO THESE PROBLEMS.

(3) THE RESULTING BENEFIT TO THE U.S. ECONOMY THROUGH NEW BIOTECHNOLOGY INDUSTRIES THAT WILL BE CREATED AS A RESULT OF THIS INVESTMENT IN RESEARCH.

THE STATE LEGISLATURE OF TEXAS HAS PROVIDED OPERATING FUNDS FOR THE INSTITUTE OF BIOSCIENCES AT THE RATE OF $7.5 MILLION OVER THE CURRENT BIENNIUM. THIS COMBINATION OF STATE FUNDS FOR OPERATION AND

PRIVATE SOURCE ENDOWMENTS FOR ENHANCEMENT PROGRAMS AND MATCHING CONSTRUCTION COSTS, ALLOWS US TO ASK FOR A NONRECURRING, ONE TIME REQUEST FOR FACILITY CONSTRUCTION FROM THE FEDERAL GOVERNMENT.

THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY, WITH ITS INITIAL FOCUS ON COMPARATIVE ANIMAL GENETICS AND ANIMAL BIOTECHNOLOGY, WILL PLAY A MAJOR ROLE IN SUPPLYING THE CRITICAL LINK BETWEEN HUMAN AND ANIMAL GENETICS. THESE PROGRAMS, ALONG WITH EXISTING PROGRAMS OF THE OTHER INSTITUTIONS IN THE TEXAS MEDICAL CENTER, WILL HELP CREATE ONE OF THE NATIONS LEADING CENTERS FOR BIOTECHNOLOGY RESEARCH AND COMPARATIVE MAPPING OF HUMAN AND ANIMAL GENOMES, AN AREA OF MAJOR EMPHASIS IN MANY OF THE RESEARCH COMPONENTS OF THE FEDERAL GOVERNMENT. THESE ACTIVITIES AT THE INSTITUTE OF BIOSCIENCE AND TECHNOLOGY WILL PROVIDE THE BASIS FOR THE DEVELOPMENT OF NEW PRODUCTS AND SERVICES IN THE AGRICULTURAL, PHARMACEUTICAL, CHEMICAL, MEDICAL, AND FOOD INDUSTRIES.

THE INITIAL PROGRAMS OF THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY WILL FOCUS ON THE FOLLOWING PROGRAMS:

(1) A CENTER FOR ANIMAL BIOTECHNOLOGY

(2) A CENTER FOR COMPARATIVE ANIMAL GENETICS

(3) A CENTER FOR ADVANCED INVERTEBRATE MOLECULAR SCIENCES

(4) A PROGRAM IN PROTEIN ENGINEERING

(5) A PROGRAM IN HUMAN NUTRITION

(6) A PROGRAM IN ANIMAL MODELS FOR HUMAN DISEASES

YOU HAVE HEARD FROM MANY SOURCES THAT THE NEW SCIENCES AND PROGRAMS DEVELOPED THROUGH THE UTILIZATION OF BIOTECHNOLOGY HAS BECOME ONE OF THE TOP SCIENTIFIC PRIORITIES OF THE FEDERAL GOVERNMENT. SUPPORT IN THIS AREA COMES FROM THE PRESIDENT, CONGRESS, USDA, AND THE NATIONAL INSTITUTE OF HEALTH IN DEVELOPING TO A MAXIMUM THE BENEFITS OF THE RESULTS OF BIOTECHNOLOGY RESEARCH. THE IMPACT OF BIOTECHNOLOGY WILL STRETCH FROM MEDICINE TO AGRICULTURE TO HAZARDOUS WASTE MANAGEMENT AND, SIMILAR TO THE SPIN OFFS OF THE NASA TECHNOLOGY, TO IMPLICATIONS WE HAVE NOT EVEN CONCEIVED OF TODAY. WE BELIEVE VERY STRONGLY THAT THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY WILL HELP CHART THE COURSE FROM BIOTECHNOLOGY'S PROMISES TO ITS REALITIES. MR. CHAIRMAN, I APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE THIS COMMITTEE TODAY IN SUPPORT OF THE REQUEST FOR CONSTRUCTION FUNDING OF $8.25 MILLION TO SUPPORT THE INSTITUTE OF BIOSCIENCES AND TECHNOLOGY WITHIN THE TEXAS A&M UNIVERSITY SYSTEM. WE HOPE THAT YOU WILL LOOK FAVORABLY ON THIS REQUEST AND STAND READY TO ASSIST IN ANY WAY POSSIBLE.

WEDNESDAY, MARCH 28, 1990.

BIOTECHNOLOGY-INTERNATIONAL TRADE

WITNESSES

DR. JOHN R. CAMPBELL, OKLAHOMA STATE UNIVERSITY
EMILY RAY ELLIOTT, OKLAHOMA STATE UNIVERSITY

Mr. WHITTEN. Doctor Campbell and Emily Ray Elliott?

Dr. CAMPBELL. Thank you, Mr. Chairman. I am John Campbell, President of Oklahoma State University. With me is Emily Ray Elliott, our Director of Federal Relations.

One hundred and fifty years ago Jonathan Baldwin Turner, the father of the land grant concept, told a group in Griggsville, Illinois, "Before you send your scholars soaring off to Athens and Rome, be sure they first know how to plant beans and harness horses." He was saying first you've got to feed the people.

A century later Neru, the first Prime Minister of India said—and I saw this in the agricultural research facility there in Delhi—said, in his inaugural address as prime minister, six important words, "Most things except agriculture can wait." Neru also knew the most important thing was feeding the people.

Mr. Chairman, for nearly half a century you have taken care of that for the United States and you and members of this committee are to be commended for being stalwarts who stood up and said agricultural research and extension are important in this country. I commend you for that.

Mr. WHITTEN. I appreciate your statement. I'll say the same thing for the members of this subcommittee. We are all interested. We have to live with all these things. As people get more and more urban they have less and less understanding of rural needs. Most of our problems here are caused by people, in my judgment, who don't understand.

The thing that is greatly disturbing is that they haven't realized the economic effects of letting agriculture go down the drain. We have $3 trillion of debt. For the last ten years the farmer hasn't received his income from sales; he has had to depend on a government check and sell below cost. That's true. Then we have section 32, which is 30 percent of import duties that are set aside to support prices and support exports. Those responsible have been using it for consumer programs.

I pointed this out right and left at the White House. They don't argue with me; they just don't do anything about it.

I appreciate your statement.

Dr. CAMPBELL. I want to commend you for staying with that, and I agree.

Mr. WHITTEN. And I am not talking about just one Administration. I'm talking about both.

Mr. CAMPBELL. I know that. And I want to include members of your committee. I had the pleasure of working with Dick Durbin when I was the dean of agriculture at Illinois.

Mr. WHITTEN. It is hard to get the message over where a fellow doesn't understand it. But I can't see how they can miss the effect on the national economy and the national debt.

Thank you very much.

Mr. CAMPBELL. Let's keep telling them that. Of course, Congressman Watkins represents me now, and I hope is going to continue.

Mr. WHITTEN. We do hear from Oklahomans from time to time. I don't know anybody who refers to rural America as much as my colleague from Oklahoma, Wes Watkins.

Mr. CAMPBELL. Well, he and I came out of rural America, so we can do that.

Mr. WHITTEN. Go ahead.

Mr. CAMPBELL. Thank you, sir.

Today I am here to say that we have started some new efforts at Oklahoma State, and one is to go out and bring more private money into our faculty. For example, since I went there 20 months ago we have gone out and gotten private funding for 20 endowed chairs and 20 endowed professorships, so 40 of those. We are pleased about that, but that is just one indication of the things we are doing.

We came today to ask for your help in two or three things.

One, we would like to have a joint match for Federal funding to match what we would like to have raised from the State and private side for a new biotechnology building for equine and bovine. Those are two very big industries in Oklahoma, representing over a $3 billion industry. Of course, the spin-off, as you appreciate, would be much greater than that. So that is one of the things. That is a one-time funding we are asking for.

Second is really two more years to help us get our Center for International Trade Development launched in terms of program. Congressman Watkins got the Federal support and this committee supported it to put that facility on line. It is a really nice one. It is going to be completed about July 1, and all of you will be getting an invitation to come and participate. We will make sure of that. Of course, we will highlight Congressman Watkins because he is the person that gave the initial thrust to help get that.

The next thing I want to say is that we are supportive of the CSRS special grants program. Here we would like to ask for continuation of our expanded wheat pasture research, which is good for the wheat growers and the livestock growers. Those are the two largest commodity groups in Oklahoma, representing about 70 percent of our overall agricultural budget.

And then the other two things in the special grants that Congressman Watkins and you all have helped us with are the integrated productions system research and the preservation and processing research—both at the Wes Watkins Agricultural Research and Extension Center in Lane, Oklahoma, a very fine facility appropriately named and doing some very fine work there.

Finally, as I said just moments ago, we are supportive of the national research initiative in agriculture. We also hope that this group will be supportive of the EPSCOR concept as they look at that. If you fund that program, we hope that you will include in there some dollars to help develop the research infrastructure and the research productivity of those States that haven't been competitive in going out and getting the Federal moneys. So we have 16 States. It includes Mississippi and Oklahoma and Kentucky. Those States we believe are the kind of States that have tremen-

dous growth potential. They have the ability to contribute to our overall national economy. With some more research development we think they will do that.

Thank you, sir.

Mr. WHITTEN. Thank you very much.

Mr. Watkins?

Mr. WATKINS. I would just comment briefly. As you know, I am from the energy rich State of Oklahoma, and, Mr. Chairman, I think we are seeing something happening in agriculture very similar to what has occurred in the American oil industry. We are importing now 52 to 53 percent of the oil that we consume—OPEC countries, primarily. I have been watching and witnessing the same thing happening to American agriculture.

In May of 1986 we imported more agriculture products than we exported.

If the trend continues we will see the U.S. in a position where it is dependent on food from other countries. We are already dependent on necessities like oil. And, I think we are headed that way in American agriculture because a lot of our consumers in this great country of ours are looking for the cheapest food possible. When you have the European Common Market subsidizing their markets out front, it is going to continue to erode demand for U.S. production.

I don't know how we get a change in policy. I will probably not be here to see that change. But in some way we have got to get the ear of our people in this country that if we lose our independence on food and fiber we are really playing jeopardy with our country.

I would share that as an observation as I have watched it over the last few years.

Mr. WHITTEN. Thank you.

Mr. WATKINS. We appreciate Dr. Campbell very much.

Mr. WHITTEN. May I add to that and say if you study the history of the city-states of the past you will find out that is when they begin to deteriorate—when they begin to depend on imports of food. I think you said it.

Four hundred years for our country is a long time for us. It is about a second in the history of much of the rest of the world. But we stay so busy we don't study the past, which is a pretty good indication of the problems we had better watch out for in the present.

I appreciate your statement and I appreciate your appearance.

Mr. WATKINS. Thank you, also, for bringing Emily Ray Elliott back to Washington. I don't get to see her very often any more. That shows you how smart he is. He hired her from my staff. I have had to retrain Paul. Look at Paul. Which one would you rather have, Paul or Emily?

Mr. WHITTEN. I'll take Emily.

Ms. ELLIOTT. Thank you.

Mr. WATKINS. Thank you, Mr. Chairman.

Mr. WHITTEN. Thank you.

Dr. CAMPBELL. Thank you.

[Dr. Campbell's prepared statement follows:]

Statement of Dr. John R. Campbell
President
Oklahoma State University

Before the Subcommittee on Rural Development,
Agriculture and Related Agencies
Committee on Appropriations
U.S. House of Representatives
March 28, 1990

Mr. Chairman and Members of the Subcommittee:

Thank you for allowing me the opportunity to testify before you today on behalf of Oklahoma State University (OSU). I am John R. Campbell, President of Oklahoma State University, and I am accompanyied by Emily Ray Elliott, my special assistant and our university's Director of Federal Relations.

We are here today to request the subcommittee's support of selected exciting agriculture research initiatives at OSU, as well as increased funding for USDA's agriculture research programs.

I want to strongly commend this subcommittee for its galant leadership over the last decade in holding the line in support of numerous key agricultural programs that support our nation's vital food and fiber industry, but which have been questioned by some. You have stood tall in staving off the most drastic of those attacks, for which we are deeply grateful. Mr. Chairman, your vision and leadership are beyond reproach.

It has been my good fortune personally to have had the opportunity to work closely with two outstanding elected representatives who serve admirably on this committee. The Honorable Wes Watkins is my current Oklahoma congressman, and The Honorable Dick Durbin was my congressman when I served as Dean of the College of Agriculture at the University of Illinois. Due to the hard work and dedication of these two gentlemen, I have developed a deep appreciation for the contributions of this committee and the Congress to agricultural research and development in the United States.

Summary of Requests

My requests today on behalf of Oklahoma State University are as follows:

1) $4.5 million for construction of a new Biotechnology Research Center at OSU;
2) $250,000 for 2 years to support the OSU agriculture trade development program;
3) $150 million for an expanded agriculture research program at USDA;
4) Establishment of an EPSCoR component within agricultural research; and
5) CSRS Special Grants approval.

Background

As one of the 1862 legislatively-authorized land grant institutions established by the Oklahoma Territorial Government in 1890, OSU is celebrating its centennial birthday this year. As we celebrate this momentous year in our history, OSU has recommitted itself to excellence in our joint missions of education, research and extension. To achieve our ambitions of serving society more fully, we need your help!

In the **education arena**, we seek new and innovative ways to graduate better educated students -- students who are prepared to not only compete, but lead, in the ever-changing, world-wide marketplace in which we live.

In the **extension arena**, OSU has made a commitment to expanding our cooperative extension and university extension services to assist the wide array of Oklahoma businesses, including farmers and ranchers, but others as well, who have floundered for several years in the stagnant Oklahoma economy. We are developing improved programs to utilize the expertise of our faculty not only in our classrooms and research laboratories, but also in practical applications of their knowledge and capabilities in the Oklahoma business community.

Important to all our efforts at OSU in rededicating ourselves to the time-honored, land grant university mission through an intense and greatly enlarged commitment to improved and expanded research at OSU. Over the past 20 months, we have created more than 40 endowed academic chairs and professorships. This will permit us to attract and employ new research faculty with top-notch credentials -- those having national and international reputations. We have used federal research funds to leverage more state research funds than ever before, and our private contributions have increased substantially, as well.

We need additional help, however, since we have a considerable distance to go, if we are to compete favorably with our nation's top research institutions. Now, a few specific comments about the special requests and opportunities I represent today:

1. OSU Biotechnology Research Center

We request your approval of $4.5 million in federal funding for the construction of a $9 million bovine and equine Biotechnology Research Center at OSU. The Cooperative State Research Service has issued a very favorable report on the project's feasibility, and planning funds are currently being utilized to complete the planning and design of the facility. The OSU center would be ready for construction in fiscal year 1991.

The State of Oklahoma has provided significant funding to develop a biotechnology research capability at OSU, which is drastically needed by both the university and our state. Research programs at the proposed Center will focus on the health and productive performance of both cattle and horses -- industries valued at approximately $3.4 billion in Oklahoma.

The proposed facilities would alleviate the shortage of quality laboratory space for veterinary research in biotechnology in Oklahoma. The Center will include modern facilities which will be suitable for housing experimental animals and conducting laboratory and animal experiments employing the latest techniques in molecular biology.

OSU currently conducts nationally recognized research programs in brucellosis and anaplasmosis, which are significant regional, national and international problems. This Biotechnology Center will ensure that these programs continue, with the goal of controlling or eradicating these costly diseases. In addition, the research plan for the proposed Center includes:

- Genetic engineering of vaccines and nucleic acid probe technology;
- Molecular pathology of infectious diseases;
- Biological response modifiers in immune therapy and immunoprophylaxis;
- Cellular and molecular host defense mechanisms;
- Arthropod vector studies; and
- Uterine growth factors.

We strongly urge your approval of funding for this project.

2. Agriculture Trade Development Program at OSU

This subcommittee is well aware of the leading role Oklahoma State University has played in initiating an international trade development program within the scope of our university. We are extremely proud of our Center for International Trade Development (CITD), and we are most appreciative of this subcommittee's support of the creation of our CITD. The $4.9 million you appropriated was matched with state and private monies to construct a $10+ million facility that will be completed about July 1, 1990.

As you may know, the OSU trade center is unique in two ways: (1) it is the only center to reside in its own independent facility, permitting it to provide on-site training for business persons and to host international trade expositions, and (2) it is the only center which has taken on a non-agricultural role in addition to its agricultural trade development mission.

We plan to dedicate the new facility in September, and we will invite all of you to participate in that momentous occasion. We would be most proud to host you in Oklahoma and on our campus. We will, of course, feature Congressman Wes Watkins in that ceremony, because of the instrumental role he played in the creation of the CITD at Oklahoma State University.

We are continuing to expand our trade-related programs at OSU. We expect to announce the hiring of a new director for our Center on April 13. This highly respected individual will be an extremely impressive addition to our CITD team. The OSU/CITD is positioned to become the nation's leader in agricultural trade development -- that is, however, contingent upon sufficient program funds being available.

We have been working closely with both the Cooperative State Research Service (CSRS) and the Foreign Agriculture Service (FAS) at USDA to develop a highly effective program for agricultural trade at OSU. Recently we proposed an international agricultural trade program to be conducted jointly by OSU's Division of Agriculture and our Center for International Trade Development, and to be supported with CSRS funding of $250,000 per year for two (2) years.

The principal objective of the proposed program is to develop an ongoing international agricultural trade development program at OSU -- one which helps stimulate economic development and create new job opportunities in Oklahoma and surrounding states. Specifically, the program would:

- Improve the export capabilities of agribusiness and food processing firms in Oklahoma and surrounding states;
- Identify export market opportunities for agricultural and food processing products produced in Oklahoma and surrounding states; and
- Provide solid economic analysis of international trade flows and market characteristics for the regional agribusiness and food processing community.

We ask the subcommittee's support of funding for this proposal. The State of Oklahoma has made a significant financial contribution toward construction and operation of the CITD, and OSU is determined to provide the quality of trade development assistance needed by our regional agricultural community. Agribusinesses and the food processing industry need our assistance to better compete in the worldwide marketplace.

3. Agricultural Research

Agricultural producers have long faced challenges to profitable production arising from weather variability, pests, diseases and pressures from inequitable foreign

production subsidies. --The 1980s brought complex new issues to the forefront, including concern of pesticide and drug residues, increased attention to agriculture as a potential nonpoint source of pollution, and the potential for global change, which could add a new dimension of uncertainty to the production of food and fiber.

Advances in the biological sciences present opportunities for application of new approaches to solving traditional and emerging challenges faced by the food and agricultural sciences. The Administration has proposed meeting this challenge with a "National Research Initiative" -- one that includes a $100 million program of competitive grants in the first year of the proposed new multi-year program, and eliminates individual competitive grant programs currently funded at a level of $42.5 million. The Administration proposal promises annual increases of $50 million in subsequent years for agricultural research.

We support the thrust of the Administration's proposal to increase agricultural research funding. While the proposed increase for fiscal year 1991 is not substantial in magnitude, and while we recognize that promises for future increases are not binding, the Administration is to be commended for moving in the right direction with increased funding for our vital needs in agricultural research.

A more substantial commitment should be made to a National Research Initiative, in whatever form it takes. We urge the committee to approve $150 million for the National Research Initiative in fiscal year 1991.

4. Agricultural Research Funds for EPSCoR States

One of the controversies surrounding the proposed National Research Initiative is the ability of institutions in states like Oklahoma and Mississippi, which are traditionally poorly-funded by federal research programs, to successfully compete for the precious National Research Initiative funds. Consequently, we urge the subcommittee to adopt the recommendations of the Coalition of EPSCoR states for addressing this problem.

As I testified earlier on behalf of the EPSCoR Coalition, the Coalition's recommendations improve upon the Administration's proposal for addressing the need for "research strengthening grants" in poorly-funded states. The Coalition recommends that 10 percent of fiscal year 1991 National Research Initiative funds be set aside for planning grants and infrastructure improvement in EPSCoR States. Additionally, the Coalition recommends establishing a goal of awarding 20 percent of the actual research grants to EPSCoR states.

As you will recall, the National Science Foundation (NSF) established the Experimental Program to Stimulate Competitive Research (EPSCoR) in 1979 for the purpose of developing the capacity of scientists and institutions in traditionally poorly-funded states to compete more successfully with the more established institutions for federal research funding from NSF and other agencies. Since 1979, 16 states and Puerto Rico have been designated by NSF as eligible for participation. (The EPSCoR states include Alabama, Arkansas, Idaho, Kentucky, Louisiana, Maine, Mississippi, Montana, Nevada, North Dakota, Oklahoma, South Carolina, South Dakota, Vermont, West Virginia, Wyoming, and Puerto Rico.)

The EPSCoR program at NSF has experienced significant success in accomplishing its goals as the first step in correcting the disparity in the allocation of federal research funds among states -- it has nurtured substantial increases in state funding of research in the EPSCoR states. However, federal research funding to these states lags far behind that provided to the top-funded research states, and agriculture research funding is no exception. The EPSCoR Coalition's recommendations would help address and resolve this disparity.

5. CSRS Special Grants

As you know, OSU participates in the CSRS Special Grants program in a variety of capacities. We appreciate this committee's past support of OSU's participation in the Special Grants program, especially your support of the OSU Expanded Wheat Pasture Research program. Upon completion of the 5-year research program, implementation of the Expanded Wheat Pasture Research is expected to result in an annual economic impact of $308 million in Oklahoma alone. The program will positively impact the economies of the 6-state region in which 25.5 million head of stocker cattle are raised on winter wheat pasture.

Our requests for the Special Grants program include:

- $400,000 for Expanded Wheat Pasture Research at OSU;
- $188,000 for "Integrated Production Systems Research - Oklahoma", which is conducted at the Wes Watkins Agricultural Research and Extension Center at Lane, Oklahoma; and
- $267,000 for "Preservation and Processing Research - Oklahoma", which also is conducted at the Wes Watkins Agricultural Research and Extension Center.

Summary

Finally, let me state our support for funding USDA's programs concerning:

- food, nutrition, and health (including food processing, trace mineral research, value-added and wellness programs);
- families (including housing, elderly, youth at risk, and stress reduction programs for farm families);
- the environment (including functional protective clothing); and
- rural revitalization and economic development.

We would like to associate ourselves with the overall budget recommendations of two organizations which admirably represent the land grant institutions -- the National Association of State Universities and Land Grant Colleges (NASULGC) and the Coalition for Advancement of Research on Agriculture, Food, and Environment (CARAFE).

Your favorable consideration of these requests would be greatly appreciated not only by Oklahoma State University but also the citizens of the great State of Oklahoma. Thank you for according me with this opportunity to testify before your subcommittee today. I would be pleased to respond to any questions. Thank you.

WEDNESDAY, MARCH 28, 1990.

EXTENSION SERVICE—STATE RESEARCH GRANTS

WITNESS

STATE REPRESENTATIVE GORDON ROPP (IL), NATIONAL CONFERENCE OF STATE LEGISLATURES

Mr. WHITTEN. Representative Gordon Ropp?

How do you do, sir.

Mr. ROPP. Fine, sir. How are you today?

Mr. WHITTEN. We all are in agreement here. We have only limited amounts of money.

Mr. ROPP. Chairman Whitten, members of the committee, it is a pleasure for me to come today representing the chairman of the Agriculture Committee of the National Conference of State Legislatures. I might say, Chairman Whitten, that about 20 years ago I was the Director of Agriculture for the State of Illinois. A young guy by the name of Syb Warrington, who retired from USDA, could not allow a day to pass without mentioning the name of Jamie Whitten. So I am real happy to have the pleasure to at least come face to face and say hello to you and also bring greetings from Syb Warrington who you may or may not recall.

Mr. WHITTEN. Thank you.

Mr. ROPP. As you may well know, each State legislature has an Agriculture Committee and, of course, we all have extension services within our respective States. Certainly in Illinois we have just celebrated our 75th anniversary just this past year.

I had the pleasure of attending a trade mission with Director Wearzen—now he is with the USDA—just last September in the Soviet Union. I had been there 17 years before, but, members of the committee, they need extension service. They need what we have accepted for some 75 years.

It is kind of exciting to see those countries want the kind of freedom that we have accepted for one reason, I think, and that is that they want to feed themselves, at least. They want a free enterprise system, and they want to be able to participate in an open market, which they have not had.

Through the efforts that we take for granted is the one thing that they looked to us for—research; new, innovative equipment; ideas. Some 17 years ago they were proud of the fact, they said, that we can produce just as much as you can in the United States—eggs, milk, meat, and so forth. This year they were saying, "What can you do for us?"

So I want to again thank you for your efforts on behalf of what you have done for agriculture and hope that you will continue to certainly fund at no less level than what we did last year in the fiscal year relative to the Extension Service, as well as to the State research grants.

Those programs are extremely important. They are ongoing in almost every State that we had, proving for education on profitability for agriculture, family well-being, soil conservation programs, leadership programs—to which I might state that, to me, one of the strongest programs that we have had for almost 75 years is the 4H

program, which I can say my mom and dad first met there a long time ago and we were participants in that for 11 years and have been a 4H leader now for 35.

The kind of programs where we can allow young people to do things and to learn by doing with their hands to me is the thing that really made America great and is the thing that we have somehow allowed people to slip away in that young people now are with idle minds and idle hands and sometimes turning to drugs and alcohol and some of the other areas of concern that we have that have caused some social ills.

So I think if we can re-initiate and reignite the Extension kinds of programs for more and more people—not only in areas but urban areas, as well—that is going to be a real plus.

The fact is that we are having a number of States that are very much involved in leadership programs for developing strong agricultural communities in conservation and water quality, including tourism, including the development of research projects expanding, for example, book trout, as in Massachusetts—and especially the State research grants, Mr. Chairman, that you are well aware of, whereby you have shortened the maturity of the DES 119 cotton in your State, and other States have accepted that as being a real positive motivator for reducing the need for extra fertilizer, insecticides, and so forth.

These are the kinds of programs that are in jeopardy if we don't try to maintain at a similar level of funding for Extension and research grants.

Without going into great detail of things I know you are well aware of, I certainly want to say thank you very much for your time today. We stand ready, in State legislatures across this country, to be a partner with the Federal Government, as well as with State governments and local units of government in these kinds of programs that are extremely effective for and on behalf of agriculture because were it not for agriculture we would not be as healthy and as happy as we are—certainly the envy of the world.

Mr. WHITTEN. We appreciate very much your statement and are glad to have that from the State legislatures. So many folks today don't seem to know anything about farming. I agree with all the programs that you mentioned.

This committee has a long record with 4H. We are the ones that set up 4H-type work in our cities. I have mentioned several times that the largest 4H club in the country some years ago was Indianapolis, Indiana. The 4H-type work got into everything. You'll never have any trouble, in my judgment, with somebody who came up with 4H work.

I am for all of these programs. This is the committee that, years ago, provided $500 million for farm housing. But few people farmed, so we struck it out and made it for rural housing. That changed the law and the President signed it. That's the history of that.

We believe in area coverage. The biggest advantage we have in the world is our ability to produce food, fiber, and clothing. So we gave away 11 percent of our acres to foreign competitors. I grew up around a country store. If you are a wholesale grocer and your outlets weren't up, you put them in business. But we put other

countries in the wholesale business in competition with us. We are doing it right now.

It is good to see you here.

Mr. ROPP. Thank you very much for your time.

[Mr. Ropp's prepared statement follows:]

STATEMENT OF REPRESENTATIVE GORDON ROPP OF ILLINOIS ON BEHALF OF THE NATIONAL CONFERENCE OF STATE LEGISLATURES REGARDING APPROPRIATIONS FOR AGRICULTURE PROGRAMS. SUBMITTED TO THE HOUSE APPROPRIATIONS SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES ON MARCH 28, 1990.

I am Representative Gordon Ropp of Illinois. I have been a member of the Illinois Legislature since 1979 and currently serve as the Chair of the Agriculture, Food Policy and Rural Development Committee of the National Conference of State Legislatures ("NCSL"). I am here today on behalf of NCSL, which serves the legislators and staffs of the nation's 50 states, its commonwealths and territories. The nation's legislators advocate a strong federal commitment to the Cooperative Extension Service and the Cooperative State Research Service.

The exchange of information provided through the Cooperative Extension Service has had a tremendous and positive impact on the productivity of agriculture and the overall quality of life in rural America. We urge Congress to continue its commitment to this federal, state and local partnership by funding the program at no less than current levels. We oppose the President's recommendation of zero funding for the renewable resources extension function. The program has been of value in providing natural resource education activities in each state. It is important to states that all successful programs in the Extension Service be allowed to continue their operations.

Furthermore, NCSL supports funding at no less than current levels for programs that promote agriculture research in the states. We appreciate the creation of the National Research Initiative. A program that supports research in plant and animal systems, natural resources and the environment, and nutrition, food quality and health should make a significant contribution toward greater safety and efficiency in agriculture. However, funding for other programs such as animal health and disease and cooperative forestry should not be decreased.

BUDGET CONCERNS

NCSL supports a continuation in 1991 of budget authority at no less than the fiscal year 1990 levels, adjusted for inflation for the Extension Service and the Cooperative State Research Service. Both functions have more than proven their worth. They not only provide services to the citizens of states, but help build the economic base of affected communities. Without the information provided by the Extension Service, many producers and rural residents would face financial crises. The value of Cooperative State Research grants that work toward the eradication of livestock disease cannot be measured.

Personnel and operations have already been streamlined to use resources as efficiently as possible in existing activities. Budgets cannot be further reduced without sacrificing programs. The federal investment in these two programs has resulted in greater community economic growth, producer profits, and overall efficiency.

The programs mentioned in this testimony are the best example of the benefits of a thriving federal-state partnership. "Cooperative" is the operative word. States are willing to commit to the these programs; the federal government should do the same.

Cooperation between levels of government has resulted in productivity and better

financial management; Illinois is reaching out to financially distressed farm families; Iowa has located a gene to stem litter mortality; Kansans are becoming exceptional business people; Nebraskans better manage their finances; and New Yorkers have linked biotechnology firms throughout the state with researchers. Information disseminated as a result of grants or through the Extension Service has improved the productivity of agriculture and the quality of life in rural America. Moreover, the Extension Service's presence in more than 3,100 counties provides a vital lifeline to farmers, ranchers, families and business owners. The National Conference of State Legislatures urges you to fund these programs at least at the FY 90 levels to assure that America's agricultural and rural bases continue to grow.

COOPERATIVE EXTENSION SERVICE

The Extension System has proven to be a successful federal, state and local government partnership. The partners share in planning and funding obligations. Without steady federal investment, Extension educators cannot adequately respond to national issues affecting agriculture, the food system and rural communities.

State Programs

Currently, the Extension Service includes educators in each of the country's land-grant universities, located in the 50 states, Puerto Rico, the Virgin Islands, Guam, Northern Marianas, American Samoa, Micronesia and the District of Columbia. In my home state of Illinois the Extension Service has identified seven priorities that we are targeting: competitiveness and profitability of agriculture, family well-being, food and nutrition, soil conservation and environmental quality, rural revitalization, leadership development and youth development education.

Illinois also operates an ongoing water quality education program directed at non-point sources of water pollution. Further, programs on water quality education have been presented at pesticide training clinics as well as programs on proper handling and disposal of household hazardous waste.

The Extension Service in Illinois is fostering business development in its rural communities. The state brings together and educates local leaders on alternatives for improving the economic climate in these areas. The leaders also are taught how to network with existing economic development efforts. The Illinois State Legislature has endorsed this program that provides education and technical assistance to local entrepreneurs.

The state of Washington is also assisting its communities in economic development efforts. The state aids the localities in their establishment of long-term economic development strategies and infrastructure projects. The Extension Service is helping the state's port districts initiate better planning, management and community relations activities. One of the Service's major functions has been to assist development practitioners in assessing market viability and seeking venture capital financing.

The University of Nebraska-Lincoln houses the educators that provide needed science and technology information to the state's citizens. The Extension Service in Nebraska has implemented education programs in the area of ground and surface water protection, specifically concerning nitrates from fertilizers and pesticides in groundwater. As a result of extension education programs, participation in fertilizer and pesticide management has increased considerably and has resulted in more efficient use of chemicals.

Kansas sponsors local leadership programs in rural areas where entrepreneurs starting businesses are assisted with management decisions and questions on food safety. Additionally, information sessions to help livestock and crop producers cope with drought are held frequently.

In 1986, the California Legislature passed the Sustainable Agriculture Research and Education Act, which directed the University of California to address the effects of current farm practices on the environment and human health. The program has three major functions: to offer grant money for research programs, to gather information and to coordinate long-term farmland research.

In Decatur County, Georgia, which is heavily dependent upon its agricultural base, Extension Service employees brought together industrial and agricultural communities. The Extension Director helped form a group that brought a Chicago peanut butter processing plant to Georgia. This group also helps the community respond to the problems lower commodity prices and drought are having on agribusiness and financial institutions.

The Extension specialists in biotechnology transfer in New York State are linking 110 biotechnology firms throughout the state with researchers at Cornell University. One of the aims of the program is to create private sector investments, jobs and new product lines.

The Cooperative Extension in Massachusetts helps promote tourism, wood industry development, agriculture in the classroom, and improved nutrition. It has also held lead poisoning prevention programs for youth, tenants and landlords.

As a result of Extension support, an aquaculture plan for Massachusetts was created. Aquaculture is proving profitable for the state; a high intensive hatchery system is marketing over 100,000 pounds of brook trout per year. Cooperative Extension introduces new technology such as low cost oxygen enhancement to these operations, along with marketing strategies.

Most of the municipally-owned watershed land in Massachusetts is not managed. With the help of the Extension Service, 21 of 34 communities surveyed in the state have implemented management plans on one-third of all the non-managed land. This management has generated an income of $2.4 million.

The Iowa State University Extension Service has advanced farm profitability and efficiency in the state; dairy producers have reported an average benefit of over $800 from educational programs held in conjunction with veterinarian clinics in northeast Iowa. A sheep enterprise program helps sheep producers better market their products.

The Iowa State University Extension is involved in several other programs, including a leadership institute and workshops to increase awareness of the elderly's needs. Water quality improvement activities by Extension staff are proving useful, as are economic development seminars and soil and water conservation programs.

The National Conference of State Legislatures is calling for maintaining fiscal year 1991 funding for the Extension Service, at no less than fiscal year 1990 levels. The proposed reduction of funding in this program would stifle economic growth in all states.

COOPERATIVE STATE RESEARCH SERVICE

The Cooperative State Research Service in the U.S. Department of Agriculture channels federal funds for agriculture research to the states. The Service works with state agricultural experiment stations, the forestry schools, some land-grant colleges and colleges of veterinary medicine.

The state institutions that receive research funding through the Cooperative State Research Service conduct about 60 percent of the publicly supported agricultural and forestry research in the United States. Each of the 50 states in addition to the District of Columbia, Guam, the Virgin Islands, Puerto Rico, Micronesia and American Samoa have at least one agricultural experiment station. Experiment stations generally have several branch stations and substations so that problems specific to a particular area may be targeted.

State Programs

The state economic base can be increased by successful research programs. The Research Service has contributed to providing new crops, greater soil fertility, genetically improved animals and better marketing systems.

The research currently being undertaken in my home state of Illinois deserves recognition. Illinois is working to improve human nutritional status, investigating the effect of radiation resulting from ozone depletion on crops and researching methods to suppress animal losses from diseases. Researchers in Wisconsin are responsible for reducing the turnaround time for confirmation of Johne's disease in cattle from 3 months to 3 days.

Mississippi serves as a perfect example of the grant program's success. Research grants are responsible for the state's newest early-maturing cotton variety, DES-119 topped the list of 20 varieties grown in four different areas. The early maturing cottons are helping to reduce the use of chemicals, thereby reducing production costs. Arizona, Louisiana and Alabama also use the DES-119 seed.

Researchers in Iowa have located a gene that might help stem litter mortality in pork. Thus far, researchers have determined that the gene is in an area that controls the immune system. Studies in this area must continue in order to discover if the immune system has a role in development.

We appreciate the creation of a National Research Initiative aimed at increasing research efforts in areas such as plant and animal systems. However, it is important that existing programs maintain a constant level of funding.

All of the programs that have been mentioned display the effectiveness of the Extension Service and research grant programs. If this state-federal partnership is to continue to thrive, the federal government must match the state commitment.

WEDNESDAY, MARCH 28, 1990.

SOIL CONSERVATION SERVICE

WITNESS

MILTON FRICKE, STATE OF NEBRASKA NATURAL RESOURCES COMMISSION

Mr. WHITTEN. Mr. Milton Fricke? We are glad to have you back.

Mr. FRICKE. It has been a few years.

Mr. WHITTEN. It is good to have you here.

Mrs. SMITH. Mr. Chairman, let me join in welcoming Milton. We both claim him. He grew up in Nebraska, so we continue to claim him out there. We are proud of what he has done.

Mr. WHITTEN. I am glad to hear from you.

Mr. ROPP. I don't know if you remember it or not, but we were in college together.

Mrs. SMITH. Yes, that's right.

Mr. FRICKE. Mr. Chairman and members of the committee, my name is Milton Fricke. I am a member of the Nebraska Natural Resources Commission.

First, Mr. Chairman, I want to thank you for the opportunity you provided for me to testify before this committee today. I also want to take this opportunity to commend one of your distinguished colleagues, Mrs. Virginia Smith of Nebraska. She has done a great deal for us in Nebraska and we certainly miss her as she retires from the House of Representatives. It is going to be a blow to Nebraska.

I have submitted written testimony.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

Mr. FRICKE. Secondly, my testimony will be brief and directed mostly toward appropriations for the Soil Conservation Service.

In short, Mr. Chairman, our 16-member Nebraska Natural Resources Commission feels strongly that our voice should be heard this year.

As you must suspect by now, we have some serious concerns. We understand the President's budget proposed a nationwide Soil Conservation Service staff reduction of 360 people. Nebraska will share in this reduction and, if carried out, the results will be devastating.

We are very concerned that the Soil Conservation Service can't do the job they need to do now. They claim they have nine years of work and need to have it done by 1995. So if we cut, we are going to be in a very sad position here.

I will be as brief as I can. I appreciate the opportunity of coming.

In closing, I appear before you and can point out with a great deal of pride that Nebraska State and local funding for soil and water conservation efforts now exceeds the Federal dollars—CRP excluded—that are directed to programs within the State. Our financial support for technical assistance also grows each year. In fact, we are even moving ahead with several watershed projects through State and local cost-sharing that would have once been funded totally by the Federal Government.

We feel we have an excellent team effort, and I plead with each of you to keep the Federal players on board so we can continue to have a winning combination.

Thank you, again, for the opportunity to share these recommendations with your committee. I could give you numbers, but you have them in the written statement.

Mr. WHITTEN. Thank you very much. We appreciate your appearance and your statement. Certainly our real wealth is the country, itself. Paper money is just paper money. Under our system, we are constantly printing more money to hide the fact that we are in trouble. But it is reaching the point now where it is worth about 30 percent of what it was 25 or 30 years ago. It is downright dangerous.

As I started to say a while ago, I am for all of these rural programs. The best thing you can have for our people is to have a prosperous agriculture. Many don't seem to realize that. We gave 11 percent of our acres overseas. Right now we are running around saying we are wide open to everybody to send their products in, but they don't let us send ours out. As I said, nobody argues with me about it; they just don't heed may statements.

Thank you for your appearance.

Mr. FRICKE. Too many people think their groceries come out of the grocery store. Some day if the trucks stop running they are going to find out where it comes from.

Mr. WHITTEN. A few years ago somebody gave me a lesson in that. If all the eggs are the same color they bring $0.10 or $0.15 more a dozen. It is just like that. They say a little bottle of molasses will sell better than a gallon because—who wants a gallon? There are just so many things about it. The merchants do that. Whatever low price you give the farmer, the merchant will sell for what the traffic will bear. They are having trouble now because many of our companies are going abroad and sending their stuff back here. I hope we'll get it straightened out sometime.

Thank you very much.

Mr. FRICKE. I don't understand it all, but it is tragic that it is happening.

Mrs. SMITH. Mr. Chairman?

I wanted to thank you especially, Milton, for stressing the need of having enough soil conservation staff. In my State the Farm Bureau has made a study and they report that we would need 54 more staff people just in Nebraska to give our farmers the assistance that they need if they are to complete their conservation plans within the five-year period. I have the figures about how many feet of terraces, and so on.

Also, I think Nebraska is going to need some financial help, as well as adequate staffing. I am glad you stressed that point.

Mr. FRICKE. I could have brought you a lot of figures like that. I want you to know that I believe in this wholeheartedly. Our farm was one of the national winners in the endowment. I don't talk it only; I live it.

Mr. WHITTEN. Thank you very much.

Mrs. SMITH. Thank you very much.

[Mr. Fricke's prepared statement follows:]

STATEMENT OF
THE NEBRASKA NATURAL RESOURCES COMMISSION
PRESENTED TO
THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES
SUBCOMMITTEE ON APPROPRIATIONS
ON
MARCH 28, 1990
ROOM 2362 RAYBURN BUILDING
WASHINGTON D.C.

Mr. Chairman, members of the subcommittee, my name is Milton Fricke and I am a member of the Nebraska Natural Resources Commission. The Commission is a state agency with the responsibility of assisting the state's 23 Natural Resources Districts with a number of conservation programs. The Commission also works closely with several of the Federal conservation agencies, such as the Soil Conservation Service and the Agricultural Stabilization and Conservation Service.

First, Mr. Chairman I want to thank you for the opportunity you provided for me to testify before this Subcommittee today. I also want to take this opportunity to commend one of your distinguished colleagues, Mrs. Virginia Smith of Nebraska. She has done a great deal for us in Nebraska, and we will certainly miss her as she retires from the House of Representatives.

Secondly, my testimony will be brief and directed mostly toward appropriations for the Soil Conservation Service. In short, Mr. Chairman the Nebraska Natural Resources Commission has not testified before your subcommittee in past years, but our 16 member group felt strongly that our voice should be heard this year. Thus, they selected me to travel half way across the country to present a 5 minute block of testimony.

As you must suspect by now, we have some serious concerns. We understand that the President's budget proposes a nationwide SCS staff reduction of 360 people. Nebraska will share in that reduction and if it is carried out, the results will be devastating.

Our agency and the 23 Natural Resources Districts of Nebraska are already very concerned about the SCS being able to carry out its ongoing responsibilities and not devote the work effort exclusively to the Food Security Act. We have numerous conservation needs that require as much attention with Food Security Act regulations.

As for implementation of practices required by the conservation provisions of the 1985 Food Security Act, our Nebraska SCS offices have 9 years of work to do in the next 5 if the 1995 goal is to be achieved. This workload could even increase substantially, since numerous farmers in the state have opted for Alternative Conservation Systems plans. In our opinion, many of these operators and landowners will find such practices require a very high degree of management in order to keep in compliance, and in turn will ask for substantial changes in their plans to secure more permanent conservation practices. These changes may require more time to accomplish than the time required for the original plan.

Our Soil Conservation Service employees are also being called on to take a very active part in water quality activities. We are of course pleased with

that, as many people have to take part. As we look at our programs in Nebraska right now, these employees could be involved in as many as 32 different water quality programs in Nebraska. As members of this subcommittee may well recognize, we have growing ground water quality concerns in our highly agricultural state. Without a doubt, we appreciate the emphasis placed on water quality by USDA agencies through the President's Water Quality Initiative. But quite frankly, when money is taken from one pocket to place in another to carry out the program, little is done for the overall conservation effort.

Now, please don't take my next statement as criticism of an agency, because that is certainly not my intent. In fact, I wish to praise the agency, the Agricultural Stabilization and Conservation Service for their efficiency in handling the work generated by the 1985 farm bill. But, in that agency, the strong desires of the Administration to pare back on the work force had to give way to reality and the agricultural circumstances. In Nebraska that agency has actually added personnel to carry out the heavy workload. Consequently, I urge you as members of Congress to take a careful look at the Soil Conservation Service budget for 1991 to assure the Service is permitted to provide the assistance required to carry out their assigned duties. From our viewpoint, a reduction in personnel at this point is very untimely and could cause future problems.

For budget specifics, we recommend the SCS Conservation Operations ongoing programs be funded at $469.0 million for FY 91. Our other major funding recommendations include River Basins at $12.5 million, Watershed Planning at $12.0 million, Watershed Operations at $200.0 million, Resource Conservation and Development Programs at $35.0 million and the Great Plains Program at $25.0 million.

As a sidelight, the Nebraska Natural Resources Commission has a keen interest in reauthorization of the Great Plains Program. The program expires in 1991. The Great Plains Conservation Program has been of considerable value to our part of the nation. We would like to see that program reauthorized separately, rather than as a part of the 1990 Farm bill.

We also strongly support the National Association of Conservation Districts recommendation that an additional $60.0 million should be directed toward personnel support to aid in implementation of the 1985 Food Security Act conservation provisions. The Association's suggestion that $35.0 million should also be set aside for the Water Quality Initiative meets with our hearty approval.

My last suggestion is directed toward the Agricultural Conservation Program. I have noted that the Administration has suggested a slight reduction in that program over last year. This is certainly not acceptable, and we encourage a $200.0 million appropriation.

While I have not mentioned the Conservation Reserve Program funding, we fully recognize the growing demands for funding in that area and we do commend members of Congress for their staunch support of this program. It is a very effective program and careful thought will be required to maintain the effort on a realistic basis. We fully realize you had to place a considerable amount of money in that effort. As a suggestion, some consideration should be given to "capping" this program in the near future, with the possibility of some of the

funds being diverted from the program back to the Agricultural Conservation Program.

In closing, as I appear before you, I can point out with a great deal of pride that our state and local funding for soil and water conservation efforts now exceeds the Federal dollars (CRP excluded) that are directed to the programs within the state. Our financial support for technical assistance also grows each year. In fact, we are even moving ahead with several watershed projects through state and local cost sharing, that would have once been funded totally by the federal government. We feel we have an excellent team effort, and I plead with each of you to keep the Federal "players" on board, so we can continue to have a winning combination.

Sound conservation policy is now in place. Program directives have been well thought out. Our Nation's farmers are now more than ever aware of the effort needed to protect soil and water resources. Public support is substantial. Your great assistance of the past is highly appreciated, and please keep this important program foremost on you minds as you carry out you difficult task of resolving the budget for fiscal year 1991.

Thank you for the opportunity to share our recommendations with your subcommittee. And I must say, it was a personal pleasure for me to appear before your subcommittee Mr. Chairman, as I have been involved with many aspects of the conservation program from a local, state and national level over the last 50 years. I admire your longstanding interest and continuing effort in the conservation program. You and your colleagues on this subcommittee have kept the effort moving and I know you won't let us down in the 1990's.

WEDNESDAY, MARCH 28, 1990.

LAND AND WATER USE

WITNESS

NORMAN A. BERG, SOIL AND WATER CONSERVATION SOCIETY

Mr. WHITTEN. We next come to our long-time friend, Mr. Norman Berg.

Norman, we are glad to have you.

Mr. BERG. Good afternoon again, Mr. Chairman and Mrs. Smith.

I am real pleased to follow Milton Fricke on the witness stand. I have been on his farm south of Omaha. It is a true example of good stewardship and a highly productive agricultural system that he has there—he and his family.

I represent the Soil and Water Conservation Society today.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your presentation.

Mr. BERG. Thank you. I will summarize, Mr. Chairman.

We have been dedicated for almost a half a century to promoting the science and art of good land and water use, and we certainly appreciate the support that you and your committee give each year to the USDA agency programs in conservation and research and Extension, forestry, cost-sharing, credit, and technical help.

We consider it a privilege to offer testimony on this kind of work that the department offers and the favorable impact that work has on the environment. There isn't any comparable Federal department that has as much impact on the environment of this country as the work that goes out through the USDA in cooperation with the State and the local land users throughout the country.

There are several conservation programs of USDA this year for the first time in over a decade that are supported by the Administration in a more realistic way. For example, they included cost-share funds for ACP and water bank and GPCP and the Great Plans Conservation Program forestry incentives. I even see some fairly modest funds for operations of small watershed and RC&D projects.

There are other examples of the Administration's support for soil and water conservation as compared to some of the proposals that we have seen in past years, and we are real pleased to see that because based on the work of the past, is a foundation for the future.

There are a few areas of concern that I would briefly cite.

We have made a recent evaluation of the demands of the Food Security Act of 1985. Our society has gone throughout the country looking at the field work that has been underway for the last five years, and the implementation of these conservation provisions do show pending shortages of both technical and cost-share funds that are going to be needed if the farmers are going to have the kind of help they need to implement these nearly 1.5 million conservation compliance plans.

They have been written. They are, for the most part, now on paper. But they need to be translated onto the land.

Based on a recent study of the pending workload nationwide, the conservation districts are saying that they will probably need a 75

percent increase in resource specialists and technicians to help the land users fully implement their plans by the January 1, 1995, deadline.

There are also additional demands that stress the personnel that have to identify the wetlands that could be impacted by the Farm Bill's Swampbuster provision. USDA has set a deadline of December 31, 1991, for completing that task and being able to tell the farmers whether or not they have the type of soil that could be impacted by that law.

As a reminder—and I am certain that everybody knows this that is acquainted with that particular Farm Bill—if a farmer is not in compliance, they could be denied the Federal program benefits spelled out by law and by the USDA rules and regulations. So they need the help to follow what they are being asked to do.

We also have suggested more funding for both the public law 566 work and the RC&D projects in our recommended funding for fiscal year 1991.

We do support, also, the President's call for one billion points of shade, as somebody has labelled them—the trees that are going to be planted this coming year and the next year and so on. But I think we shouldn't forget the tree planting that has benefited over the years from the ACP, the Conservation Reserve, and the cooperative efforts, through the conservation districts, of State agencies that have had a lot of experience in terms of planting trees in this country, including the wind breaks and the shelter belts in the Great Plains.

These local programs for delivery to the land users for tree planting should be emphasized and continued.

We are also joining the others that have testified earlier this afternoon for the need for additional research. The coalition that is speaking up in terms of a five-year plan for accelerating research in several areas, including the natural resource and environmental areas, is a good initiative that should be supported.

Part of that work ought to be to encourage additional research in the low-input sustainable agriculture area because there is a backlog in that particular field.

I have attached to my testimony the tables that show the fiscal year 1990 proposals and the recommendations of my society. We feel our suggestions are prudent—especially when viewed from the perspective, as you so well know, of about a $1.2 trillion or $1.3 trillion budget for fiscal year 1991.

I am pleased to have appeared before your committee, Mr. Chairman, for three decades now. I can certainly say with the knowledge and the experience that I have had that this committee's work has really contributed to the environment of this country.

Thank you.

Mr. WHITTEN. Thank you very much. We welcome you. We know of your valuable contributions to the country in your years.

You mentioned wetlands. I would point out that everybody is for wetlands being determined wetlands. Where we have had arguments, and where we are supposed to have had a settlement, is that the President's message was not to reduce the amount of wetlands, but, to change the definition of wetlands. All we ask is to stick by the original designation because it is fine. As I have point-

ed out many times, a fellow who is going to farm with his tractor and his seed—it is a little bit expensive to plant right down to the water line. That is unsound for him and everybody else.

But what we don't need in this country is having farmlands called wetlands. We just don't want the farmlands called wetlands. It is true that a whole lot of land is now idle, but sooner or later we are going to wake up and put it back to work. That is the one advantage we have got in the world: the ability to produce food. Instead of that we are paying our folks not to produce at a time when the world is begging for what we produce.

I have testimony here that we had 115 countries that needed food and clothing and we were selling them guns and ammunition.

We appreciate it. We do have the money in here for the Soil Conservation Service. We have had to restore it about 36 times, but it is now in here. But the point of it is that the farmer has to put up about three times as much as is in here.

We appreciate your record and we appreciate your continuing interest.

Mr. BERG. Thank you, Mr. Chairman.

[Mr. Berg's prepared statement follows:]

SOIL AND WATER CONSERVATION SOCIETY

To advance the science and art of good land and water use worldwide

Statement

Norman A. Berg
Washington Representative
Soil & Water Conservation Society

to the
House Committee on Appropriations
Sub-Committee: Agriculture, Rural Development, and
Related Agencies

March 28, 1990

Mr. Chairman, and members of this Sub-Committee, the Soil and Water Conservation Society (SWCS), a non profit organization, dedicated to the science and art of good land and water use, appreciates this opportunity to again testify. Our members do have an interest in the wide variety of conservation actions of the U.S. Department of Agriculture that depend, annually, on the level of funding established by the U.S. Congress. The work of the Soil Conservation Service, the Agricultural Research Service, the Cooperative Extension Service, the Cooperative State Research Service, the Economic Research Service, the Agricultural Stabilization and Conservation Service, the Farmer's Home Administration, and the U.S. Forest Service (even though their funding level is initiated by another Sub-Committee) is, in my opinion, the most significant of any U.S. Department, in determining the future quality of life and the environment in this Nation. The scope and magnitude of their activities exceeds that of any Nation at any time in the history of this World's civilizations. It is simply a gross understatement to again say that the actions of your Sub-Committee, under your Chairmanship for many decades, has been outstanding. For this, you have the sincere appreciation and gratitude of my Society, and all residents of this country.

In the interest of your time, I'll request that my prepared statement be made part of the official record of the hearing.

Mr. Chairman, unlike some Fiscal Year budget proposals over the past decade, by the Administration, we agree with several USDA witnesses. Their FY'91 proposals represent a more realistic and positive funding level for soil, water, watershed, and related resource conservation activities. It seems to be a more gentle wind blowing up Pennsylvania and Independence Avenues to Congress this year than we observed in years past. Then the primary thrust seemed to be to: either eliminate or reduce the ability of the conservation agencies to perform. Because your SubCommittee, and the Congress, with the wisdom of listening to the evidence from the farm, ranch, and forest landusers, valued years of a conservation partnership with the private and the public sector, a network for delivery was not destroyed. Now we can build on that solid foundation of U.S.D.A. experience in providing research, extension, cost-share, credit, and technical assistance to those who do soil and water conservation work.

Therefore,though our FY'91 funding recommendations are quite modest,when viewed from the perspective of a $ 1.2 trillion budget,they do suggest increases that conservation warrants. Attached to this statement are SWCS recommendations for USDA agencies that contribute their diverse abilities toward the solutions needed to assure a quality environment for America. We know the budget process has increasingly become as someone said,"a Rube Goldberg nightmare---often consuming an entire legislative session".We also know from prior actions that the budget you support for the next fiscal year will be workable.

A few areas that SWCS notes should be more closely examined include the following:

-Our Society,in January,released the findings of field-oriented assessments of how implementation of the Conservation Title of the Food Security Act of 1985 (FSA) is progressing "on the ground".I have provided the Committee a copy of that report,and will not cite our several findings.However,as we look ahead,especially at the workload resulting from the 1.4 million"Conservation Compliance Plans",there are potential staffing and financing challenges.Both the technical and cost-share assistance,that is presently available,is below that needed for landusers to fully implement their scheduled plans.Also,the heavy workload related to the identification of wetlands,as mandated by the"Swampbuster"provision of FSA, will probably require more technical assistance in FY'91.

-The several FY'91 proposals,from the Administration,for the Farmer's Home Administration,are unrealistic.Loans for the popular Watershed Protection and Flood Prevention,and the Resource Conservation and Development Projects are needed.

-The President's call for the planting of a billion trees each year,is commendable.However,has the Administration,at this time,fully considered the valuable work carried out by the Conservation Districts for many years?The trees planted with the help of SCS and ACP,and the more recent forestry work on over 2 million acres in the Conservation Reserve Program,are solid advances that should not be ignored.

-A number of organizations,who have long been involved in small watershed management, have joined together to support the efforts of this Committee to strengthen this program.An increase in financing,for Watershed Operations,is suggested.

-Although there are those who maintain that the present level of appropriations for Sustainable Agricultural Research and Extension is sufficient,SWCS supports a National Initiative for Research on Agriculture,Food,and the Environment.New knowledge on resource conservation,including water quality and possible global warming change,is highly desirable.

-Although non-federal appropriations for soil and water conservation increases each year,the federal contribution to this partnership,including personnel is necessary.

I have had the privilege of presenting testimony to your Sub-Committee for three decades.There is no doubt in my mind that you will again do everything possible to support conservation work.I'll be pleased to respond to any questions.Thank you.

Soil and Water Conservation Society *(SWCS)
Fiscal Year 1991 Funding Recomendations

Agency	FY'90 Final Appropriation	FY'91 Administration Proposal	FY'91 *(SWCS) Recommended
	(In Millions of Dollars)		
Soil Conservation Service:			
Conservation Operations			
Ongoing programs	476.9	489.4	496.0
1985 FSA Implementation		0.0	60.0
Water Quality Initiative		17.6	35.0
River Basins	12.3	10.4	12.5
Watershed Planning	8.8	6.9	12.0
Watershed Operations	179.9	151.1	200.0
Great Plains	20.9	24.6	25.0
RC&D's	27.3	24.9	35.0
Total for SCS	726.1	724.9	875.5
Funds transferred to SCS:			
Office of Surface Mining (RAMP)	12.0	2.1	20.0
Agricultural Stabilization and Conservation Service:			
Conservation Reserve(CRP)	1,011.0	2,253.6	2,470.0
ACP	182.4	176.0	215.0
FIP	12.4	12.4	25.0
Water Bank	12.2	12.8	25.0
Colorado Salinity Control	10.3	14.8	15.0
Agricultural Research Service:			
Soil and Water Conservation Research	73.6	89.0	90.0
Cooperative State Research Service:			
Hatch Act	155.1	158.5	160.0
McIntire-Stennis	12.3	13.0	18.0
Rangeland Research	.5	0.0	1.0
Sustainable Agriculture	4.5	4.5	15.0
New federal research funding, National Initiative(CARAFE)	42.6	100.0	150.0

(more)

Cooperative Extension Service:

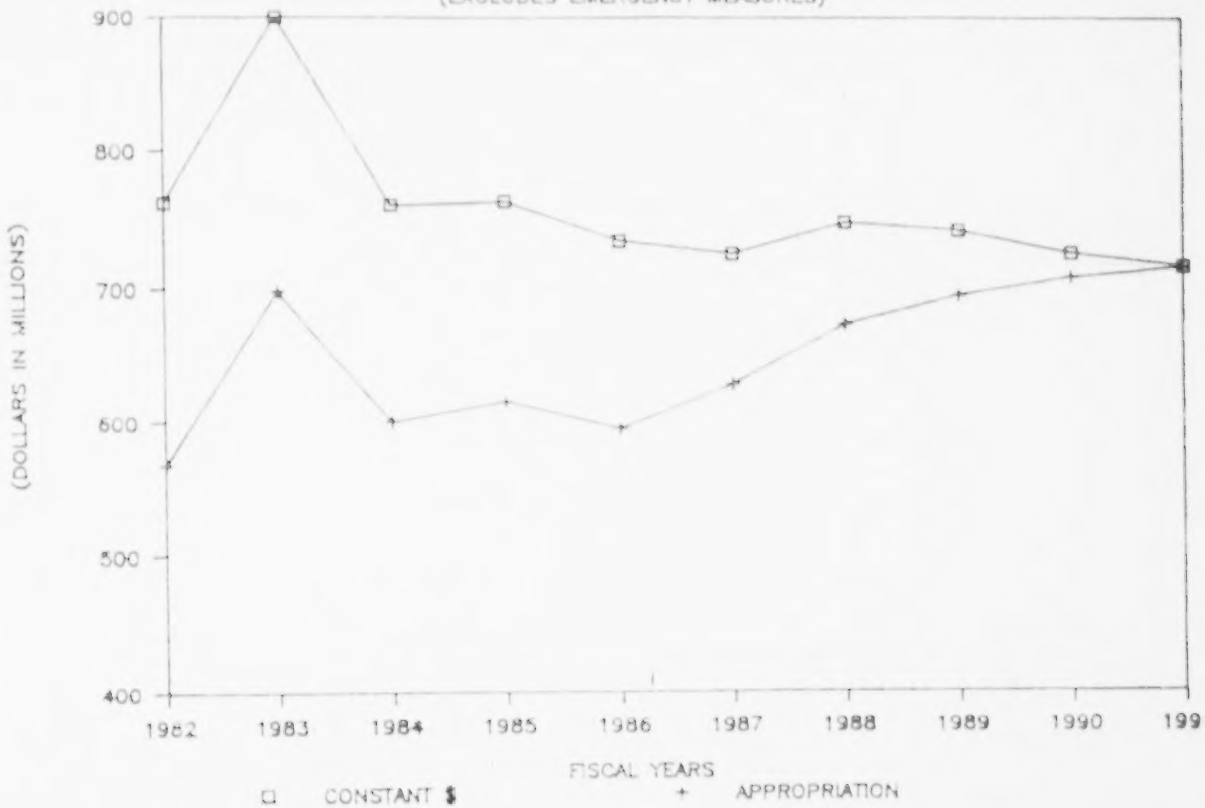
General Formula Funds	242.7	246.5	257.0
Earmarked Programs			
Water Quality	5.2	15.5	16.0
Pesticide Impact Assessments	2.6	3.6	4.0
Integrated Pest Mangement	7.1	7.2	12.0
Renewable Resources Extension Act	2.7	0.0	15.0

Farmer's Home Administration:

Rural Community Fire Protection	3.1	0.0	3.1
Soil & Water Loans-Direct	5.5	0.0	14.0
Soil & Water Loans-Guaranted	1.5	0.0	0.0
Watershed Protection and Flood Prevention	4.0	0.0	8.0
RC&D Loans	.6	0.0	1.2

ALL FUNDS

(EXCLUDES EMERGENCY MEASURES)



Appropriation in (millions)										
Actual.....	$567.0	$698.3	$599.9	$615.4	$594.6	$628.3	$673.1	$694.0	$707.4	$714.8
Constant...	$762.5	$912.6	$760.7	$763.2	$733.9	$724.5	$747.1	$741.1	$724.5	$714.8

WEDNESDAY, MARCH 28, 1990.

CONSERVATION AND EXTENSION

WITNESS

R. MAX PETERSON, INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

Mr. WHITTEN. Mr. Max Peterson?

Mr. PETERSON. Thank you, Chairman Whitten. It is good to see you again, sir.

Mr. WHITTEN. It is good to have you here, sir.

Mr. PETERSON. You have my testimony, so in order to save——

Mr. WHITTEN. Your complete statement will appear in the record immediately following your presentation.

Mr. PETERSON. Thank you very much, Mr. Chairman.

Let me first highlight what has already been mentioned by Mrs. Smith and by others as we are concerned with the reduction in staffing for SCS. We believe that the plans that are now in place out there that will need to be implemented will require adequate technical assistance from SCS in order to see that it happens because, as we all know, inevitably a farmer will prepare a plan. He wants to implement it. In the process, he may want to change it. We think maybe as much as 30 percent of the plans as they start to implement may require change, which requires adequate technical assistance to get that done.

So we do support adequate technical assistance to see that the farmer has adequate technical assistance when he gets ready to do the work.

Then we also support adequate funding for ASCS. We are pleased to see the ACP programs proposed to be funded this year, and particularly including funding that supports good management of farmland.

We then would express also some concern with the Extension Service Budget. I, myself, as a youngster was a member of a 4H club. I know how important to youth it is to be involved in those kinds of activities. We are particularly concerned that the proposed budget would again terminate the Renewable Resources Extension Act Programs, which we think are extremely important out there. If we are going to plant a lot of trees and do all of these other good things we need to be sure that we have adequate education and technical assistance to provide for support for those.

Finally, in looking at the program for APHIS, we think APHIS has made some substantial progress in handling animal damage control, which can be a real problem for farmers and we need to handle it constructively or we will have a major problem both in the wildlife community and in the farming community. So we would support some increase in both research and administration for APHIS to do that important job well.

With that, Mr. Chairman, you have accepted my complete statement, and I would be happy to answer any questions.

Mr. WHITTEN. We are glad to have your statement. I didn't follow through with Mr. Fricke a while ago, but we have always been for land grant colleges and Extension.

Mr. PETERSON. Yes, sir.

Mr. WHITTEN. We have these various programs, but the Extension Service is the one that pulls them together, and the land grant colleges.

Mr. PETERSON. Right.

Mr. WHITTEN. They are a key part of our life, and we have tried to restore cuts and keep them on a sound basis.

Mr. PETERSON. And I believe there is about a three-to-one match of the Federal Extension money. As you pointed out earlier, as our people become more urban it is actually more important that they understand where the resources come from.

Mr. WHITTEN. It is hard to do. You don't find that many youngsters are entering agriculture unless it is some specialized job, or unless they inherit a farm.

Mr. PETERSON. I recognize that.

Mr. WHITTEN. It is a dangerous situation in the long run. Thank you for your appearance.

Mr. PETERSON. You are welcome.

Mr. WHITTEN. The committee will stand in recess while we answer the call of the House.

[Mr. Peterson's prepared statement follows:]

International Association of Fish and Wildlife Agencies
(Organized July 20, 1902)
Hall of the States
444 North Capitol St. NW, Suite 534, Washington, DC 20001 (202) 624-7890
R. Max Peterson, Executive Vice President

TESTIMONY BEFORE THE
APPROPRIATIONS SUBCOMMITTEE ON RURAL DEVELOPMENT,
AGRICULTURE, AND RELATED AGENCIES
ON THE FY 1991 BUDGET REQUESTS OF THE SOIL CONSERVATION SERVICE,
AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE,
EXTENSION SERVICE, AND ANIMAL AND PLANT HEALTH INSPECTION SERVICE
by
R. Max Peterson, Executive Vice-President
28 March 1990

Mr. Chairman and members of the Subcommittee, the International Association of Fish and Wildlife Agencies appreciates the opportunity to testify before your Committee on the FY 1991 budgets of the Soil Conservation Service, Agricultural Stabilization and Conservation Service, USDA Extension Service, and Animal and Plant Health Inspection Service. It is in the spirit of cooperative resource management that the Association testifies on these agency budgets.

The International Association of Fish and Wildlife Agencies, founded in 1902, is a quasi-governmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources. The Association's governmental members include the fish and wildlife agencies of the states, provinces, and federal governments of the U.S., Canada, and Mexico. All 50 states are members. The Association has been a key organization in promoting sound resource management and strengthening federal, state, and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest.

SOIL CONSERVATION SERVICE (SCS)

The Soil Conservation Service has responsibilities for implementing conservation provisions of the 1985 Food Security Act (FSA), addressing nonpoint source pollution mandates of the 1987 Water Quality Act, and addressing the President's "no net loss" wetland policy. The FY 1990 budget provided $725.4 million and 13,821 staff years for carrying out SCS activities and responsibilities. The proposed FY 1991 budget reduces funding by $2.4 million and 356 staff years. The requested funding level provides for continuation of all programs except the Rural Abandoned Mine Program. The FY 1991 budget request expands SCS technical assistance as part of the ongoing USDA water quality initiative and increases the Great Plains Conservation Program. However, a general decrease of funding and staff years is proposed for technical services to implement the final stages of the 1985 Food Security Act.

About 140 million acres of cropland in the U.S. are considered highly erodible and must be managed to meet conservation compliance provisions of the 1985 FSA. The deadline for completing conservation plans was January 1, 1990 and SCS has nearly completed this task. However, at least 30 percent of these plans are expected to be revised annually as producer objectives and management practices change. In addition, SCS has important responsibilities in verifying and assisting in the implementation of sodbuster and conservation compliance plans.

The Association requests the Congress examine SCS funding and staffing levels carefully to ensure that programs and activities are sufficiently funded to meet all scheduled responsibilities in implementing conservation provisions of the FSA. The Association recommends that additional funds be provided to support 200 additional field biologists to complete wetland determinations and other conservation provisions of the FSA. In addition, adequate funding and staffing must be maintained to provide technical services necessary to implement ASCS conservation programs, especially the Conservation Reserve Program (CRP), Water Bank Program (WBP), Forestry Incentives Program (FIP), and Agriculture Conservation Program (ACP).

SCS water resource programs assist with planning and construction of watershed and upstream flood protection projects to use non-structural practices that reduce property damages, erosion and sediment. These programs offer unique opportunities to restore and protect wetlands in accord with Presidential wetland initiatives. The Association supports the SCS legislative proposal to require cost-sharing for watershed planning and construction, consistent with the 1986 Water Resources Development Act and supports funding at the SCS proposed level of $151 million. Furthermore, the Association recommends that SCS establish and give priority attention to cost sharing for acquisition of perpetual wetland and floodplain conservation easements and application of non-structural land treatment practices. Such changes are needed to provide more balanced financial assistance to local sponsors and to perpetuate and enhance wetland functions to retain floodwaters, improve water quality, and provide fish and wildlife habitat.

The North American Waterfowl Management Plan (NAWMP) calls for working with agricultural interests to implement the Plan. The Association requests the Congress urge that SCS assist the U.S. Fish and Wildlife Service and state fish and wildlife agencies in implementing actions called for the six U.S. joint ventures of the Plan.

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE (ASCS)

An adequately funded budget for the Agricultural Stabilization and Conservation Service is essential to implement the conservation provisions of the FSA as ASCS programs have tremendous impacts on natural resources.

Agricultural activities have been among the leading cause of nonpoint source pollution and wetland loss and degradation. The President's commitment to wetlands protection requires full implementation of the Conservation Reserve Program (CRP), arguably the largest ASCS conservation program of this century. The FY 1990 ASCS budget included a net CRP appropriation of $1.01 billion, after $61.5 million that was transferred to SCS for technical assistance and related programs. In addition to direct CRP appropriations, ASCS continues to receive $624 million from the Commodity Credit Corporation for salaries and expenses associated with implementing CRP and other conservation provisions of the FSA.

It is estimated that over the 10-year life of CRP, with 40 million acres enrolled, a net savings to Commodity Credit Corporation will be achieved. Specifically, CRP payments will be $22.4 billion, thereby reducing CCC payments by $11.8 billion for a net cost of CRP of $10.6 billion. The Administration's FY 1991

budget recommends CRP funding of $1.878 billion and $630 million for salaries and expenses. This appropriation is based on a $395 million carryover balance from FY 1990 to implement CRP in FY 1991. The recommended CRP appropriation includes monies for annual rental payments for 6 million acres to be enrolled through September 30, and for part of the costs of technical assistance and cost-sharing necessary to establish protective vegetative cover on CRP lands. The Association commends USDA, and ASCS in particular, for implementing the Conservation Reserve Program and urges the Secretary establish and implement additional signups necessary to place 40-45 million acres in the CRP during 1990. The Association also urges ASCS to develop additional incentives to enroll pastured riparian zones, encourage bottomland hardwood establishment, wetland restoration, field windbreaks/shelterbelts, and wildlife habitat and filter strip establishment to assist in water quality and wetland initiatives.

The Water Bank Program (WBP) protects and enhances private wetlands with a high potential for conversion to agriculture. FY 1990 funding of $12.4 million was necessary to help maintain 10-year WBP contracts on existing acreages. The Association supports the increased funding level for the WBP of $12.8 million to further enhance wetland protection measures and supports the Administration's proposal to allow perpetual easements on lands with expiring WBP contracts. This increased funding level is necessary to maintain wetland protection on existing acreages.

The Association also supports continuation of the Agricultural Conservation Program (ACP) at funding levels that emphasize wetland restoration, water quality improvement and implementation of conservation management plans for up to 140 million acres of highly erodible croplands. In addition, the Association recommends that ASCS closely examine approved cost-sharing practices, particularly conservation tillage practices, and redirect funding towards those practices that achieve the highest degree of soil erosion reduction, water quality improvement, and resource protection.

New approaches are needed to address crop depredation by wildlife at the federal level and ASCS is in a position to formulate and implement solutions. Using ACP and FIP practices as models, ASCS and APHIS-ADC also should jointly develop a list of approved techniques and cost-share rates for animal damage abatement. Possible techniques include repellents, fencing, scare devices and lure crops. A specific approach that would be helpful in several states is cost-sharing for deferred fall plowing of corn stubble. Such a practice would help reduce wildlife depredation of unharvested fields and protect land susceptible to soil erosion.

The Association further recommends that Congress examine ASCS funding and staffing levels to help ensure that sodbusting, swampbusting and conservation compliance provisions are implemented and enforced. In particular, adequate training and resources are needed to assist in verifying and spot-checking implementation of conservation plans.

In addition to its conservation programs, ASCS administers a major $6-10 billion commodity program that affects more than 220 million acres of commodity cropland base. Included in that acreage total is an average of more than 40 million acres that are idled annually under the Acreage Reduction Program (ARP).

This program should explicitly support the President's water quality initiative. Therefore, the Association recommends that ASCS cost share and require perennial vegetative cover on all ARP lands to reduce soil erosion and help abate flow of agriculture contaminants to groundwater and surface waters.

EXTENSION SERVICE -- U.S. DEPARTMENT OF AGRICULTURE

The Administration proposes a $24.5 million reduction in the Cooperative Extension System budget which would result in a substantial reduction in formula funds to the states and the elimination of many important programs. The Association recommends restoring the budget to FY 1990 levels and to expand efforts in education programs that focus on critical natural resource issues.

The Association appreciates and supports the Smith-Lever portion of the Extension Service budget which enables the agency to sustain its important education programs. It also recognizes that the Extension Service has assumed a leadership role for education to increase understanding and implementation of conservation provisions of the FSA. The Association commends the Cooperative Extension System and the Extension Service, USDA, on the process that has been set in motion over the past three years.

The FY 1991 budget contains support for a national water quality initiative program. The $15.5 million request for water quality is a positive step. Water quality issues, particularly the voluntary reduction of non-point sources of contaminants and developing an understanding of public benefits of clean water are urgent. The education programs of the Cooperative Extension System are an integral element in dealing with these problems and additional funding is needed. The FY 1991 budget terminates funds to support the Renewable Resources Extension Act (RREA) of 1978, which authorized $15 million yearly to support comprehensive natural resource education programs in each state. Past appropriations have provided a leveraging effect in the states and a sense of a national commitment to the importance of natural resource programs. As a result of RREA appropriations, states have invested three dollars for every RREA dollar appropriated. The Association does not want to lose this leverage to encourage state and local commitment and investment.

Additional funding is needed for conservation and management of natural resources. This initiative is essential for achieving the maximum potential of conservation provisions of the FSA and to address Presidential goals for tree planting and "no net loss" of wetlands. Such an emphasis also is needed to assist farmers in making their operations more sustainable and profitable.

The Association recommends restoration of the Extension Service budget to FY 1990 levels with priority given to conservation education activities to implement the FSA; an increase for the Renewable Resources Extension Act to $6 million; and supports the Administration proposal for funding $15.5 million for Water Quality management and education efforts.

ANIMAL AND PLANT HEALTH INSPECTION SERVICE (APHIS)

APHIS is the federal agency responsible for controlling wildlife damage to agriculture, aquaculture, forest, range and other natural resources; for protecting public health and safety through control of wildlife-borne diseases; and wildlife control at airports. Its control activities are based on the principles of wildlife management and integrated pest management and are carried out cooperatively with state fish and wildlife agencies. Most of the APHIS operational work is cost shared between the Federal Animal Damage Control (ADC) program, state and county governments, agricultural producers, and other cooperators. The cooperation and support of the agriculture community is essential to maintaining wildlife populations. A progressive animal damage control program which minimizes the adverse impact of wildlife populations is necessary to maintain that support and to counter increasing pressures for indemnity due to wildlife damage. The Association commends APHIS/ADC on the progress made in the transition of ADC from the Department of Interior to the Department of Agriculture, but notes that it was underfunded and understaffed at the time of transfer. ADC can be progressive, responsible and successful only if adequately funded.

Although the Association supports the Administration's ADC budget request of $32.0 million, the $2.6 million increase over FY 1990 only provides funds to keep up with inflation but does not address critical issues facing the program such as personnel shortages and equipment needs. Increasing demands for services, without funding for personnel and capital outlays for outdated transportation and other field equipment, jeopardizes the entire program delivery system. The Association recommends an increase of $3.0 million over the President's budget to meet the critical equipment needs and address migratory bird, predator and depredations to fish culture and aquaculture. The Association is concerned that past Congressional increases have not resulted in much improvement at the field level. Allocation figures provided through the National Animal Damage Control Advisory Committee indicate dramatic increases in USDA administrative charges with only small percentage increases in field level funding.

The President's budget does not contain any additional funds for research. The Association recommends an additional increase of $2.0 million over the President's budget for pesticide registration activity. New registration requirements under the amended Federal Insecticide, Fungicide, and Rodenticide Act have added significantly to the cost of maintaining registrations. The recommended increase is needed to maintain the current control tools.

In summary, the Association supports the Administration budget request for $32 million as a base and further recommends adding $3.0 million for critical equipment needs and operations; and $2.0 million for pesticide registration for a total APHIS/ADC budget of $37.0 million.

In conclusion, the Association supports budgets that recognize the multiple resource impacts of these Department of Agriculture agencies, while concurrently recognizing that these programs are primarily occurring on private lands. Our member state fish and wildlife agencies are committed to working cooperatively with private landowners, rather than against them. The Association would be happy to answer any questions the subcommittee may have.

WEDNESDAY, MARCH 28, 1990.

PEST CONTROL RESEARCH

WITNESSES

HARVEY S. GOLD, NATIONAL PEST CONTROL ASSOCIATION, INC.
DR. GEORGE W. RAMBO, NATIONAL PEST CONTROL ASSOCIATION, INC.

Mr. WHITTEN. The committee will come to order.

Mr. Gold, we are glad to have you, sir.

Mr. GOLD. Thank you very much, Mr. Chairman. We appreciate the opportunity to provide comments to you and the subcommittee.

My name is Harvey Gold and I am the Executive Vice President of the National Pest Control Association. We represent about 2,500 member companies who are in the business to protect our nation's health and property by controlling insects and rodents and other pests in hospitals, in schools, nursing homes, commercial establishments, hotels, and so on.

Our members serve an urban population that is about 75 percent of the U.S. population. In view of this, we believe that more attention in research in the area of urban pest control needs to be made by Federal agencies. We believe presently that it is woefully too low.

With me is Doctor George Rambo, who is Director of Research Education and Technical Affairs for the National Pest Control Association. Doctor Rambo has many years of experience and expertise in the area of research, and I would like for him to take a few minutes to explain some of the specifics.

Mr. WHITTEN. We will be glad to hear it.

Dr. RAMBO. Thank you, Mr. Chairman. It is a pleasure to be here to talk to you about this important subject.

In front of you is an urban pest control research funding proposal which cites many facts and figures on the billions of dollars that are spent every year by the public to repair damage done by wood-destroying organisms and, of course, the loss of food in storage due to insects and rodents.

A major cost that hasn't been complied yet and one that is impacting the urban environment is the diseases that are cropping up and the increased awareness of the allergenic reactions to insects, in general, and to rodents. That is widening the health concerns of exposure to these pests.

Our society, as you have mentioned earlier, is highly urbanized. As Mr. Gold just said, over 76 percent of the population is in the urban area. We calculate that it could be over 200 million people this year with the new census.

The urban environment is being stressed because it is growing in the population increase and because its sometimes deteriorating conditions lead to more pest problems.

Unfortunately, what is being done to offset these pest problems in the area of what has been referred to as integrated past management is very little. The CSRS budget in the last several years has been woefully short in the area of funding urban pest management research. At the same time, the Environmental Protection Agency

is investigating alleged pesticide problems. The urban community is very concerned about pesticides and health, as we are.

The problem is that in the past the IPM has been funded through CSRS and through agricultural programs in agriculture, and it has shown to work very, very well in agriculture. But in the urban arena circumstances change. You have to ask the questions of how many pests the average homeowner can tolerate. What is the tolerance factor or threshold level inside of a health care facility of rodents, flies, and cockroaches? How many insects or parts of insects will be permitted in America's food?

We need to fund research that answers these questions and the important economic questions of implementing pest management programs.

Now, along these lines, several universities across the United States have noted the demands in the urban environment. Texas A & M has created an endowed chair for urban entomology and research and urban pest management. Purdue University has recently created a Center for Urban Pest Management. Virginia Polytechnic Institute and State University at Blacksburg is active in this. Other universities that have already in place researchers doing work are: Clemson, North Carolina State, Auburn, Rutgers, University of Florida, Mississippi State, and a few others.

But recognizing this need is only part of it. Obviously, money is needed to fund this research. Even though many people talk about pest management programs in urban areas, very little work has been done to show that they actually will work.

In short, the continuing discussion, removing pesticides, reducing application methods, increasing the use of IPM programs, there is little data that will support that it will be effective.

In the meantime, we have a continuing interest in biological controls, development of biorational controls such as growth regulators. With these new, innovative methods we can revolutionize control of pests in the pest management industry.

We feel that there is a funding crisis in this area. We have had very little funds available in the last several years. CSRS, through the competitive grant system, has the opportunity to do this, and we would like to request that more money be put into that budget than is currently there and earmarked for urban pest management research. We are hoping the we can get at least $500,000 earmarked for this on an annual basis, which we think will start the funding process and start the research business off to a very, very good start.

I want to thank you for the opportunity to make these comments.

Mr. WHITTEN. On this committee we appreciate the problem very much as compared with many others, because we hear of it frequently. That is just one of the never-ending competitions between people and insects back through history. We have tried to deal with it, as you know, through the years.

When you have the Delaney Amendment, where you can measure one parts per trillion, there is no such thing as zero. So everything now, as long as the Delaney Amendment is the law, is operating by sufferance. We had one department where they stopped using an item because the Delaney Amendment said they had to

"under the law". I had to disagree with them about "under the law," but we are going to have to agree about what is dangerous and what isn't.

Now, we are not advocating anything that is dangerous, but we are going to have to have some agreement, because anybody is wide open to stoppage as long as the Delaney amendment is like it is now. Everybody that I know agrees with that.

But we have pushed and pressed and tried every way to get it changed. During Mr. Delaney's lifetime he agreed that we could modernize it if we would just keep his name. I never could get action on that. Nobody wants to say where the line ought to be. But the line ought to be that anything that is dangerous to public health shouldn't be allowed to be used. But who is going to determine that?

At any rate, we recognize the problem. I don't know what we can do, but this committee recognizes it.

Thank you very much.

Mr. GOLD. We would appreciate any help that we could get, Mr. Chairman. We appreciate your interest. Thank you.

Dr. RAMBO. Thank you.

[The prepared statement follows:]

INCREASED URBAN PEST CONTROL RESEARCH FUNDING PROPOSAL, FY 1991

FOR

USDA AGRICULTURAL RESEARCH SERVICE (ARS)

USDA COOPERATIVE STATE RESEARCH SERVICE (CSRS)

Prepared by
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- S U M M A R Y -

NEED FOR INCREASED URBAN PEST CONTROL RESEARCH

USDA Agricultural Research Service (ARS)
USDA Cooperative State Research Service (CSRS)

Urban pest control protects the health and property of millions of Americans on a daily basis. Despite Congressional mandates to USDA in prior budgets, research in this area continues to be overlooked and underfunded. The need to develop alternative methods to control pests in urban environments, along with the problem of increasing pesticide resistance, dictates that funding for environmentally sound urban pest management research be increased. Reasons for this are:

- 77% of the U.S. population lives in urban areas.
- Pests that urban residents are exposed to can transmit or carry many life threatening disease organisms (food poisoning, lyme disease, rabies, etc.).
- Over 50% of homeowners try do-it-yourself methods with inadequate knowledge to do the job correctly. Increasing resistance by pests, such as cockroaches, to available pesticides results in heavy overuse trying to gain control. This overuse contaminates the environment and leads to potential harm for both home and agricultural use.
- Fleas and cockroaches cost the American public over $2 billion a year to control. Available control resources are becoming less effective (i.e. resistant strains) and larger quantities of pesticides are used trying to get control. The pests increase, the amount of pesticides increase and the costs grow.
- Rodent contamination and infestation costs the consumer over $1 billion annually. There is no federally-funded research laboratory devoted to research to control this pest.
- Resistance to currently available pesticides in insects and rodents is documented and increasing.

- In 1990 urban pest management research, the government has funded only 2.5 scientists ($400,000 net to location) for household pest work at the primery ARS laboratory for urban pest management (Gainesville, Fla.) and funded less than the equivalent of one full-time scientist (less than $100,000 net) to university researchers.

- There is a need to expand this research base to increase funding to USDA/ARS, (government facilities) and especially to USDA/CSRS (university competitive grants) in order to meet the increasing needs.

- It is recommended that a total increase of $630,000 be appropriated in FY 1991 to be targeted to USDA Insects Affecting Man and Animals Laboratory at Gainesville, Fla. and to USDA/CSRS for competitive research grants for research to control urban pests and the damage they inflict on humans, structures and their contents. The specific distribution for the increase in appropriation by facility (and need area) is specified in the attached budget proposal.

Att.

URBAN PEST CONTROL

Proposed Increase over 1990
Appropriations for FY 1991

Agency/Objective	Amount
• USDA/ARS	
- Prime facility for urban pest control research, Gainesville, FL	
For: Addition of one full-time scientist for research on cockroaches, fleas and fire ants. This is one third of USDA/ARS' statement of need for new research funds.	$200.00
Justification: Attachment A	
• USDA/CSRS	
- Competitive university research funding	
For: Stimulate new research and education on urban pest control methods.	$430,000
Justification: Attachment C	
Samples: Specific University research proposals:	
- C-1 Research proposal University of Georgia College of Agriculture	
- C-2 Research proposal Texas A&M University, Department of Entomology	
Total	$630,000

WASHINGTON POST ... WEDNESDAY, FEBRUARY 11, 1987

JUDY MANN

The Pest Is Yet to Come

A grave crisis is about to beset us. This is not some minor economic turbulence that we can weather by selective belt-tightening. Nor is it some foreign policy imbroglio that we can survive by placing our faith in our political leaders and hoping that they will get us through this one with their customary acumen. This isn't something we can ignore.

Our quality of life is about to be threatened. This may be up there with the great gas shortage in terms of its impact on the way America lives. Or, more specifically, the way Americans in the affected states live, and sooner or later, unless governments and communities do something, that may be everyone who doesn't live in Alaska.

We are facing an invasion of bugs. According to a story by Boyce Rensberger in Sunday's Washington Post, the Asian cockroach arrived in Tampa, Fla., about three years ago, presumably as a stowaway on a ship from Southeast Asia, and since then the bug has infested 400 to 500 square miles around Tampa at an estimated density of up to 100,000 an acre. These things not only reproduce at an astonishing rate—even for cockroaches—but they also hitchhike by car, bus and produce truck and are busily setting up colonies outside Florida. The prediction is that they may hit Maryland this summer.

The Asian cockroach is not your routine cockroach that anyone who has ever lived in New York knows too well. That roach can be controlled by spraying, distributing poisonous compounds in the infested areas, and leaning heavily on your landlord to do regular business with the exterminator. Keeping your lights on all the time is also helpful.

The Asian cockroach, however, behaves entirely differently and is infinitely more troublesome—even dangerous.

Philip Koehler, one of the entomologists who discovered the Asian cockroach invasion, described them in the article as behaving in the most revolting ways imaginable. This is the stuff of nightmares. "These Asian roaches fly, and they're attracted to light-colored surfaces. They'll swarm out in the evening and fly at the TV set. They'll sit on walls by the thousands. If you've got a white shirt on, they'll fly at it and want to roost.

"They live outdoors, too, and you walk on the lawn, they fly up like grasshoppers, sometimes they're so thick, you can't put your foot down without stepping on 25 or 30. If you try a cookout, they'll fly around the barbecue, crawl over the food. It's pretty disgusting."

That may be the understatement of the month.

I, along with a great many other residents of my community, had some experience last year with bug infestations that are similar in some respects to what is headed our way (and, apparently, everybody's way). Virginia was hit by a record-breaking box elder bug invasion. Box elder bugs fly, they like the warm, sunny sides of houses, and they spend the winter in box elder maple trees. The best way to get rid of them, said one exterminator, was to get rid of the box elder trees. The problem with that advice is that (depending on which exterminator you chatted with) the bugs may be holed up in a box elder tree one mile away from your house or 10 miles away. Nobody knows what attracts them to certain houses, and nobody knows what their flying radius is, but everyone seemed to agree that they were a harmless nuisance.

I do not consider bugs crawling on the side of my house or on my deck or in my children's sandbox to be harmless.

I called the U.S. Department of Agriculture to find out what they knew. It turns out that not much money or research is devoted to bugs that don't harm agricultural produce, and the advice I got was to call a university professor who is an expert on box elder bugs. He said the best defense against them was extermination and clearing the lawn of maple pods and leaves. Ten million maple pods and one exterminator visit later, the bugs were pretty much gone. They'd been enough of a nuisance in the county, however, to rate a front-page story in the local newspaper.

And that's without their crawling over people's clothes and outdoor cooking or television screens. The newspaper article about Asian cockroaches reported that the USDA's research budget on household pests is about $200,000 and that most of that goes to salaries for scientists working on other bugs. The Asian cockroach isn't going to differentiate between Republican and Democratic households, or members of Congress and just plain folks. The lament here is that money and scientific resources will be allocated promptly to stop the hordes long before they hit the Potomac. The Russians aren't coming. The Asian cockroach is.

WEDNESDAY, MARCH 28, 1990.

COMPETITIVE RESEARCH GRANTS

WITNESSES

DR. BERNARD O. PHINNEY, THE AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

DR. MELVIN J. JOSEPHS, THE AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

Mr. WHITTEN. Doctor Bernard Phinney?

Dr. PHINNEY. It is a great pleasure to be here this afternoon, Mr. Whitten. I know your name well, although this is the first time I have been in this part of the world. I have spent most of my time in research. I am having an exciting and educational experience here.

The man on my left is Doctor Mel Josephs. He is Executive Director of the American Society of Plant Physiologists, and this is the group that I am representing. I am speaking on their behalf today. I am speaking for the national research initiative.

My name is Bernard Phinney. I am a professor of biology at UCLA. I have carried out basic research on corn for more than 45 years—full-time research. I continue to work there in the laboratory. I am deeply interested in problems of agriculture, even though I am doing basic research.

I am presently President of the American Society of Plant Physiologists. This society has more than 8,000 members. They represent fields of plant physiology, plant nutrition, plant biotechnology, and plant molecular biology.

This Society has authorized me to give the strongest support to the national research initiative, and we specifically endorse the principal of a peer review system for competitive grants in basic research.

In the time that I have I would like to make a few comments about basic research, competitive grants, and peer reviews.

As you know, for years support of basic research, specifically in the plant sciences, has been very margin. Prior to 1978, the only peer reviewed support was from the NSF, very meager amounts from the NIH, and small amounts from the Department of Energy.

In the past, funds have been provided for basic research to the USDA; however, these funds were limited exclusively to Agricultural Research Service scientists and scientists of the agricultural experiment stations. No scientist working in private and non-land-grant institutions were eligible for funds from the USDA; however, in 1978, as you well know, Congress authorized the formation within the USDA of the Competitive Research Grant Office. This office actually revolutionized the support of fundamental agricultural research by making funds available to any qualified scientist in the country.

As usual, the main problem with this program is that it is woefully under-funded. The program routinely receives requests for support that are more than ten times the amount of money available.

The lack of sufficient funds is particularly serious for plant sciences because research in these fields are not supported by the National Institute of Health. By contrast, NIH does fund research in microbiology and, of course, many disciplines working on animals. This is not true for basic plant research.

I have been told you are also aware that the Board of Agriculture of the National Research Council—this is the arm of the National Academy of Science—has issued an important document called "Investing in Research: a Proposal to Strengthen the Agricultural, Food, and Environmental System." This NRC document calls for an increase of $500 million a year in Federal funding for research in agricultural sciences.

The National Research Council document recommends application of these funds through the system of competitive grants. Fortunately, this system is already in place under the management of the CRGO office.

Now, the present level of $35 million to $40 million assigned to this office is only 4 percent of the total research and development moneys in the USDA's Office of Science and Education—only 4 percent. Another way of looking at it: if the average individual grant from CRGO were put on parity with the average NIH grant, $170 million would be required for CRGO, not the $40 million currently appropriated. This is comparing plant research now to overall NIH grants. The $100 million recommended by the Administration falls far short of such real needs.

Now, in the little time I have left I would like to give you one example of basic research in plant biology that has had an immediate impact on agriculture.

In this country plant researchers discovered some time ago a new class of plant hormones called gibberellin. This hormone controls the growth of many plants. This is especially true for grapes. As a result of the basic research and applied research on these hormones, Thompson seedless grapes are now sprayed with gibberellins at the time of flowering. The result is a 40 percent increase in grape size without a loss in quality. The implications are obvious.

If you speculate now, genetic engineering could lead to the conversion of these grapes to permanent higher producers instead of having to spray them every year. This could be done by inserting genes that produce gibberellins at the critical time of fruit development. This is basic research that could be applied to a practical problem.

I cite this example just to show how basic research has been put to practical advantages. This is both for the farmer and the consumer.

This is my story. This concludes my statement. I thank you for your attention. I would be happy to answer any questions you may have on the subject of basic research.

Mr. WHITTEN. Thank you. We used to have a member from Pennsylvania who, every time he had a bill on the floor said, "Where are you going to get the money." If I had a question here it would be: where are you going to get the money?

We have the unpleasant job of deciding what is basic research, what part is applied research. Also we to deal with a budget here where they call on us to cut the existing programs $1,400,000,000.

Dr. PHINNEY. Yes.

Mr. WHITTEN. We have Gramm-Rudman putting a lid on. We have the Budget Act. I met with the Rules Committee this morning.

With all of that, we have to give some attention to it.

And then, on the other side, I have sat here for a good many years. When I first got on this subcommittee years ago I had the head of the experimentation station in my State who came here and wanted some money. I asked him what he wanted to use it for. He said, "Well, if you are going to tell us how to use it we don't want it."

In later years I had a lady come before us who wanted $5 million for the interplay relationship and a whole lot of other things in connection atomic energy. I said, "I notice you want this for four or five years. What do you expect to do?" She said, "We expect to get the budget to $25 million in four or five years."

I have heard it all. But I agree with you: we have to have basic research, we have to have applied research. All of it is for use. We have got the job of deciding which is more important.

Now, the other side of it is that universities and colleges are charging up to 50 percent for general administration. We put a 25 percent limit on it and gained about $3 million to go into research work.

We had one or two big universities endowed by millions of dollars, which spent the whole research fund for administration.

Dr. PHINNEY. I am research oriented. I am on your side.

Mr. WHITTEN. I am interested in what the track record is. We will do our best to deal with it, but that is what we are up against.

Dr. PHINNEY. My spies tell me that Mr. Whitten is our mentor, and it has been my pleasure. You are our backer, and it is my pleasure to have seen you and been able to present this.

Mr. WHITTEN. We are glad to have you. You are right: we can't put up with what ought to be. The question is how to balance it.

Dr. PHINNEY. Yes.

Mr. WHITTEN. If you have got some problem troubling you right now and you can say this will help you 20 years from now—we have got to try to balance it. But I do appreciate you and the need for looking ahead.

Dr. PHINNEY. And we thank you for helping us.

Mr. WHITTEN. What has happened the last 20 or 25 years is hard to understand. How you can pick up a phone and talk to England right now. Something has to give for that.

Thank you a whole lot. We appreciate it.

Dr. PHINNEY. Thank you.

[Dr. Phinney's prepared statement follows:]

STATEMENT

of the

AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

Presented by

Bernard O. Phinney, Ph.D.
President, American Society of Plant Physiologists
and
Professor of Biology, Department of Biology,
University of California, Los Angeles, CA

before the

House Subcommittee on Rural Development,
Agriculture and Related Agencies
of the
House Committee on Appropriations

Public Witness Hearing on the
FY 1990 U.S. Department of Agriculture
Research and Education Appropriations

March 28, 1990

Mr. Chairman and Members of the Subcommittee:

My name is Bernard Phinney and I am a Professor of Biology at the University of California, Los Angeles, where I have carried out basic research on corn for the past 45 years. I continue to work in the laboratory and am deeply interested in problems related to agriculture. As president of the American Society of Plant Physiologists, I represent the views of more than 8,000 practicing plant physiologists, plant nutritionists, plant biochemists, and plant molecular biologists. The Society has authorized me to give the strongest support to the National Research Initative (NRI).

We specifically endorse the principle of a peer review system for competitive grants in basic research.

1. For years federal support of basic research in the plant sciences has been marginal. Prior to 1978 the only peer-reviewed support was from the National Science Foundation (NSF); small amounts have also been available from the National Institutes of Health (NIH) and the Department of Energy (DOE). In the past, funds have been provided for basic research through the United States Department of Agriculture (USDA), these funds were limited exclusively to Agricultural Research Service (ARS) scientists and scientists of the Agricultural Experiment Stations (ARS). No scientists working in private and non land grant institutions were eligible for funds from the USDA. However, in 1978, Congress authorized the formation within the USDA of the Competitive Research Grants Office (CRGO). This office revolutionized the support of fundamental agricultural research by making funds available to any qualified scientist in the country. The only problem with the current CRGO program is that it is woefully underfunded. The program routinely receives requests for support that are more than 10 times the amounts available. The lack of sufficient funds is particularly serious for the plant sciences because research in the plant sciences is not supported by the National Institutes of Health (NIH), whereas microbiological and animal research

does receive such support. Food, feed, fiber, and biomass are all derived from the growth of plants. Thus, there is a real need--and an opportunity--to support basic research in the plant sciences.

2. As you know, the Board on Agriculture of the National Research Council has issued an important document: "Investing in Research, a Proposal to Strengthen the Agricultural, Food, and Environmental System." The NRC document calls for an increase of $500 million a year in federal funding for research in the agricultural sciences. The NRC document recommends application of these funds through the system of competitive grants. This system is already in place under the management of the CRGO office. The present level of $35-$40 million assigned to the CRGO program is only 4 percent of the total research and development monies in the USDA's Office of Science and Education. If the average inidividual grant from CRGO were put on parity with the average NIH grant, $170 million would be required from CRGO, not the $35-$40 million currently appropriated. The $100 million recommended by the Administration falls short of the real needs.

3. Finally, I would like to give you one example of basic research in plant biology that has had a profound impact on agriculture. In this country, plant researchers discovered some time ago a new plant hormone called gibberellin. This hormone controls the growth of many plants; this is especially true for grapes. As a result, all Thompson Seedless grapes are now sprayed with gibberellin at the time of flowering. The result is a 40 percent increase in grape size with no loss in quality. Genetic engineering could lead to the conversion of these grapes to permanent high producers by inserting genes that produce gibberellin at a critical time of fruit development.

This concludes my statement. I thank you for your attention and will be delighted to answer any questions concerning the role of basic research in the plant sciences.

WEDNESDAY, MARCH 28, 1990.

REGIONAL RESEARCH CENTERS

WITNESS

HON. RICHARD H. STALLINGS, A U.S. REPRESENTATIVE FROM THE STATE OF IDAHO

Mr. WHITTEN. Our friend Richard Stallings is our next witness. It is good to see you.

Mr. STALLINGS. Mr. Chairman, how are you?

Mr. WHITTEN. All right.

Mr. STALLINGS. Mr. Chairman, I appreciate this opportunity to take a few moments of your time.

Mr. WHITTEN. We are glad to have you before us.

Mr. STALLINGS. This is always a good experience for me to come before you and to add a list of things that I think are important to agriculture—and particularly to Northwestern agriculture.

I will shorten my oral presentation. I would like to highlight several items and then leave a more detailed statement.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

Mr. STALLINGS. Thank you, sir.

First of all, I am concerned that extreme technical food safety issues are being influenced by sensationalized media coverage. Judgments are often being made without a complete understanding of the issues. This has been especially true for agricultural chemicals.

Steps must be taken to evaluate food safety needs without leaving our agricultural protection system to fend off unwarranted claims that result in economic disasters.

One of the most significant problems we have in addressing food safety concerns is a simple lack of technical specialists.

In addition, the USDA must take a leadership role in enhancing the pesticide clearance program, the pesticide impact assessment, and integrated pest management programs. Without this action, one side effect of the so-called "FIFRA Lite" legislation passed last Congress would be the loss of many minor-use pesticides or those used on crops of limited acreage.

Mr. Chairman, virtually everything grown in my district is what we call minor-use crops. Estimates by the EPA and manufacturers indicate that as many as 30 to 50 percent of minor-use pesticides may be dropped from re-registration.

Secondly, I support funding for accelerated research development and demonstration projects in aquaculture. Fish farming is the fastest-growing U.S. agricultural sector and deserves Federal recognition and support.

I plan to introduce legislation to establish and strengthen programs for aquaculture research, including the development of therapeutic compounds for commercial fish production.

The President's 1991 budget proposal would eliminate funding for the five present regional research centers. I recommend funding at the current authorized level of $7.5 million.

Third, Mr. Chairman, your assistance and support are needed for several programs outlined by the National Barley Improvement Committee. Congress must continue its commitment to develop gene transfer technology for small grains as part of the overall effort to address the barley yellow-dwarf virus problem. For fiscal year 1991, $350,000 is needed for the CSRS regional barley gene mapping program.

In addition, the Administration proposed a $3.7 million increase to implement a program of genome mapping to be jointly funded with an additional $15 million in the President's national research initiative.

Fourth, since 1986 the Russian wheat infestation has spread from the Panhandle of Texas to 17 States and 3 Canadian provinces. The devastation measured in crop loss and control costs has exceeded $200 million nationwide. I know $9.5 million per year is a substantial request, but compared to the hundreds of millions of dollars in crop losses which is occurring we can't afford not to invest the money.

Finally, I would like to lend my support to a proposal for a national cool season food legume research program. This proposal is in respond to urgent and persistent needs in the United States and developing countries to develop a collaborative approach for approving the efficiency and sustainability of pea, lentil, chickpea, and faba bean cropping systems. Five key areas—genetics, plant protection, management, nutrition, and technology transfer— are of paramount importance in reducing inputs that go into these cropping systems.

The Agency for International Development recently presented a study to Congress recommending the establishment of this type of program administered through USDA CSRS. This study recommended $1.5 million in Federal funds per year for five years, beginning with fiscal year 1991.

The Federal contribution would be matched by industry contribution of $100,000 per year for five years. In-kind contributions will come from ARS and State Extension experimental station personnel, land, buildings, and facilities where program-sponsored research activities are carried out.

Mr. Chairman, in closing I would like to thank you again for this opportunity to address your subcommittee. I recognize that I have presented numerous requests, but many needs within the agricultural community remain unmet.

The allocation of scarce resources is always a difficult task. I appreciate the wisdom you have shown in the past in carrying out this tremendous responsibility. I appreciate the opportunity I have with serving with you in the Congress, sir.

Mr. WHITTEN. Thank you a whole lot. We are glad to have you here. We will do the best we can.

Mr. STALLINGS. I know you will.

Mr. WHITTEN. Thank you.

[The prepared statement follows:]

RICHARD H. STALLINGS
[illegible]
[illegible]
[illegible]

AGRICULTURE
COMMITTEE ON
SCIENCE, SPACE
AND TECHNOLOGY
SELECT COMMITTEE
ON AGING

Congress of the United States
House of Representatives
Washington, DC 20515

HONORABLE RICHARD H. STALLINGS

Testimony Before

Subcommittee on Rural Development,
Agriculture, and Related Agencies

House Committee on Appropriations

March 28, 1990

THE 1991 BUDGET:

AGRICULTURE APPROPRIATIONS

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to bring to your attention several important issues related to agriculture funding.

First, I am deeply concerned that extremely technical food safety issues are being influenced by sensationalized media coverage. Judgements are often being made without a complete understanding of the issues. This has been especially true for agriculture chemicals. Steps must be taken to evaluate food safety needs without leaving our agriculture production system to fend off unwarranted claims that result in economic disasters. The re-establishment of food science departments could help in this effort.

In addition, the USDA must take a leadership role in enhancing the Pesticide Clearance Program, the Pesticide Impact Assessment, and the Integrated Pest Management Programs. Without this action, one side-effect of the so-called "FIFRA Lite" legislation passed last Congress will be the loss of many "minor-use" pesticides, or those used on crops of limited acreage. I must point out that every crop grown in Idaho, save wheat, is considered a minor-use crop by chemical manufacturers. This includes potatoes, sugar beets, barley, oats, fruits, spearmint, rapeseed and crambe, and alfalfa, to name a few. Estimates by the EPA and manufacturers indicate that as many as 30-50 percent of minor-use pesticides may be dropped from registration.

Second, I strongly support funding for accelerated research, development and demonstration projects in aquaculture. Fish farming is the fastest growing U.S. agriculture sector and deserves federal recognition and support. I plan to introduce legislation to establish and strengthen programs for aquaculture research, including the development of therapeutic compounds for commercial fish production. The President's 1991 budget proposal would eliminate funding for the five present regional research centers. I recommend funding at the current authorized level of $7.5 million.

Third, Mr. Chairman, your assistance and support are needed for several programs outlined by the National Barley Improvement Committee. Congress must continue its commitment to develop gene transfer technology for small grains as a part of an overall effort to address the barley yellow dwarf virus problem. $350,000 is needed for the CSRS Regional Barley Gene Mapping project for FY91. I also request that you approve the Administration proposed $3.7 million increase to implement a program of genome mapping to be jointly funded with an additional $15 million in the President's National Research Initiative.

Since 1986, the Russian Wheat infestation has spread from the panhandle of Texas to 17 states and three Canadian provinces. The devastation, measured in crop loss and control costs, has exceeded $200 million nation-wide. $9.5 million per year is a substantial request, but compared to the hundreds of millions of dollars in

crop losses which are currently occurring, we can't afford not to invest this money.

Because the Aphid appears to like barley even more than wheat, I urge the committee to create and fund a post-doctoral position assigned to the USDA/ARS Plant Science Research Laboratory at Stillwater, Oklahoma dedicated to research of aphid control on barley. Also with respect to barley, I'm concerned that the Administration's budget for barley germplasm research, evaluation, and storage needs does not even keep up with inflation.

Fourth, I would like to comment on the proposal for a National Cool Season Food Legume Research Program. A complete proposal is attached to my testimony.

This proposal is in response to urgent and persistent needs in the United States and developing countries to develop a collaborative approach for improving the efficiency and sustainability of pea, lentil, chickpea and faba bean cropping systems. Five key areas involving genetics, plant protection, management, nutrition and technology transfer are of paramount importance in reducing inputs that go into these cropping systems.

In the FY89 Foreign Appropriations bill, the Agency for International Development was requested to conduct a study on the topic. This study was presented to Congress on October 1, 1989, and recommended the establishment of such a program which should be administered through USDA/CSRS. This study also recommends $1.5 million in federal funds per year for five years, beginning with the FY91 budget. The federal contribution will be matched by industry contributions of $100,000 per year for five years.

In-kind contributions will come from ARS and state Extension Experimental Station personnel, land, buildings, and facilities where program-sponsored research activities are carried out.

Let me conclude by mentioning a few items in the President's budget which cause concern. First, the President's budget recommends zeroing out the federal crop insurance corporation, beginning in FY91. The Agriculture Committee is undertaking a major rewrite of the crop insurance program in the 1990 farm bill, and Congress should continue funding of the program for FY91. Unfounded assumptions don't make for good budgeting.

Second, the President's budget continues the trend of reducing the Farmers Home Administration's direct operating loans and substituting guaranteed loans. In Idaho and many other states, the nature of the banking industry and the problems working with FmHA have led to limited success with the guaranteed loan program. Every year, I have hundreds of farmers who are turned down for loans at commercial banks, qualify for FmHA loans, and find that funding is not available. Then they attempt to get a guaranteed loan, and the banks refuse to lend to a client they just

turned down for a commercial loan, even with an FmHA guarantee.

This year, Idaho has more than $10 million dollars in approved applications for FmHA operating loans. However, Idaho has been allotted little more than $6 million. The trend toward more guaranteed loans is causing great difficulties in the state of Idaho, and I encourage you to review this issue before further balancing the budget on the backs of farmers who cannot get credit elsewhere.

Thank you, Mr. Chairman, for this opportunity to address the Subcommittee. I recognize that I have presented numerous requests to the Subcommittee, but many needs within in agriculture community remain unmet. I recognize that the allocation of scarce resources is always a difficult task and I sincerely appreciate the opportunity to share my perspective with you.

IDAHO
WASHINGTON
ASSOCIATIONS
of Pea & Lentil
PRODUCERS

Stateline Office/P.O. Box 8566/Moscow, Idaho/83843 (208) 882-3023/FAX (208) 882-6406/TWX 510-100-5443/USA DPLC

EXECUTIVE SUMMARY
of the
PROPOSAL FOR A NATIONAL COOL SEASON FOOD LEGUME
RESEARCH PROGRAM

USA Pea & Lentil Industry
In Cooperation With
Colleges of Agriculture in California, Idaho,
Montana, Oregon, Washington, Wisconsin, Minnesota,
and New York

BACKGROUND: THE IMPORTANCE OF FOOD LEGUMES

Among the oldest food cultivated by humankind, fresh and dry peas, lentils, chickpeas (garbanzo beans), and faba beans are principal cool season food legumes found in temperate regions of the world where they are widely grown.

Their nutrition value is unparalleled. Legume seeds are high in protein and are rich in fiber, complex carbohydrates, B-vitamins, and potassium. When supplemented with cereal grains, seeds, or nuts, they combine to form a perfect high-quality vegetable protein. As the population of the planet continues to increase, there is an increasing reliance on plant protein sources for human and animal food.

Fresh and dry peas, lentils, and to a lesser extent chickpeas are important cash crops in California, Idaho, Montana, Oregon, Washington, Wisconsin, Minnesota, and New York. Because these products are widely consumed throughout the world, the export market is critical. Approximately 50% of fresh peas are exported for canned and frozen use, and 65%-70% of dry pea and lentil crops are exported annually. Cash value to farmers, processors, and others associated with production and distribution of these food products exceeds an estimated $100 million annually.

Grown in rotation with other crops like cereal grains, food legume plants provide important benefits to farmers through improved soil fertility via biological nitrogen fixation, improved soil structure, moisture conservation, erosion control, cereal disease reduction, and grassy weed control. For many farmers, food legumes offer an alternative cash crop for income stability.

THE NEED FOR FOOD LEGUME RESEARCH

This proposal has had broad input and support from farmers, industry, scientists, university administrators, government, and the 1986 International Cool Season Food Legume Research Conference. Its concept and focus are a direct result of a feasibility study conducted by the Agency for International Development in FY89 at Congressional direction. The Program will meet needs expressed by all major partners who will be involved:

1. Industry is calling for an integrated, multidisciplinary approach in research to solve continuing problems related to disease, crop and ecosystem management, human nutrition, new product development, technology transfer, and low-impact sustainable agriculture methods.

2. The U.S. scientific community engaged in food legume research is calling for effective communication linkages among themselves and the international food legume scientific community, particularly those at ICARDA in Syria and ICRASAT in India.

3. The federal government through the President's Office of Science & Technology & Policy is promoting the concept of federally-sponsored university research centers that bring together scientists from a variety of disciplines to work on problems of U.S. industry. OSTP maintains that such centers would improve the competitiveness of U.S. industries, stimulate U.S. industry support for research, and improve the transfer of technology to U.S. industry.

THE OBJECTIVES

Five critical research areas identified by the scientific and industry partners will be addressed through the Cool Season Legume Research Program:

1. Germplasm Enhancement and Utilization
2. Plant Protection
3. Crop and Ecosystem Management
4. Human Nutrition and Product Development
5. Technology Transfer and Scientific Knowledge Exchange

THE COST

This Proposal requests $1.5 million in federal funds per year for 5 years, commencing with the FY91 budget. This federal contribution will be matched by industry contributions of $100,000 per year for 5 years. In-kind contributions will come

from ARS and state Extension experiment station personnel, land, buildings, and facilities where Program-sponsored research activities are carried out.

THE BENEFITS

1. Farmers will benefit by consistently-funded, concentrated research on improved farming methods that emphasize pest and disease control through biotechnical methods and through better crop and soil management.

2. Environmental and human hazards associated with intensive use of farm chemicals will be lessened. Improvements in the ability of food legumes to fix nitrogen in the soil could reduce the amounts of commercial nitrogen fertilizer farmers use throughout their crop rotations -- which will ultimately reduce farming costs and the increasingly high levels of nitrates in the nation's ground water.

3. Developing conservation tillage systems for food legumes will conserve moisture and lessen erosion problems.

4. Even more nutritious legumes may be developed through biotechnology -- and new and interesting food products developed from them for both export and domestic markets.

5. The scientific community will achieve greater coordination and cooperation among research institutions nationally and internationally, thus reducing duplication and strengthening complementarities. Better linkages among basic research, applied research, and technology transfer will be established.

National Barley Improvement Committee

February 28, 1990

Honorable Richard H. Stallings
1221 Longworth House Office Building
Washington, D.C. 20515-1202

Dear Representative Stallings:

The National Barley Improvement Committee (NBIC), which represents the entire U.S. barley industry; growers, users, and researchers, is pleased to have this opportunity to meet with you and/or your staff agriculture specialist to discuss barley research and barley farm programs.

Barley is a significant U.S. crop. Barley is not only economically important in states that grow barley, it also makes a significant contribution to the economy of every state due to its value added use as animal feed, in beer, and in food products.

We are requesting the assistance and support of your office to help meet the following objectives.

1. **CONTINUED FUNDING FOR THE COOPERATIVE STATE RESEARCH SERVICE (CSRS) REGIONAL BARLEY GENE MAPPING PROJECT SPECIAL RESEARCH GRANT. FUNDING OF $350,000 IS REQUESTED FOR FY91.** Continued funding in FY91 for the CSRS Russian Wheat Aphid Special Research Grant, but with a higher level of activity in barley than in the past.

2. **Approval of funding in FY91 for the USDA Agricultural Research Service (ARS) Plant Science Program** that restores funding cuts resulting from the FY90 sequester and increases funding from FY90 at no less than the rate of inflation. Specifically, the NBIC is recommending that Congress:

   A. **APPROPRIATE $100,000 FOR THE ARS BARLEY GENETICS POSITION** R.T. Ramage) **AT THE UNIVERSITY OF ARIZONA, TUCSON AND $100,000 FOR THE ARS BARLEY GENETICS POSITION (E.A. Hockett) AT MONTANA STATE UNIVERSITY, BOZEMAN.** These positions are currently underfunded. The appropriation will enable these scientists to effectively conduct their research and the ARS to refill these positions when they retire.

   B. **ENCOURAGE THE ARS TO KEEP ITS COMMITMENT TO CONGRESS THAT THE PLANT GENE EXPRESSION CENTER (PGEC) IN ALBANY, CALIFORNIA WILL DEVELOP GENE TRANSFER TECHNOLOGY FOR SMALL GRAINS AS PART OF AN OVERALL EFFORT TO ADDRESS THE BARLEY YELLOW DWARF VIRUS PROBLEM.** This could be accomplished by dedicating one permanent, full-time researcher at the PGEC to gene transfer research with barley, oats, and wheat.

   C. **ENCOURAGE THE ARS TO ALLOCATE A FAIR PORTION TO BARLEY OF THE $750,000 IN NEW FUNDING APPROPRIATED BY CONGRESS IN FY90 FOR RUSSIAN WHEAT APHID RESEARCH.**

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Page 2

D. APPROVE THE ADMINISTRATION PROPOSED $4.5 MILLION INCREASE TO IMPLEMENT A PROGRAM OF GENOME MAPPING TO BE JOINTLY FUNDED WITH AN ADDITIONAL $19.0 MILLION IN THE NATIONAL RESEARCH INITIATIVE.

E. APPROVE THE ADMINISTRATION PROPOSED $2.5 MILLION INCREASE TO STRENGTHEN THE PLANT GERMPLASM SYSTEM WITH $150,000 ALLOCATED TO BARLEY.

F. APPROPRIATE $200,000 IN FY91 FOR THE CREATION OF AN ARS POSITION DEDICATED TO RESEARCH ON THE NUTRITIONAL QUALITY OF OAT AND BARLEY FIBER AT THE USDA CEREAL CROPS RESEARCH UNIT, UNIVERSITY OF WISCONSIN, MADISON (This goal is also supported by the American Oat Association).

3. APPROVAL OF FUNDING IN FY91 FOR THE FOLLOWING TWO ITEMS IN THE USDA ARS BUILDINGS ~~AND FACILITIES~~ BUDGET.

A. $4.0 MILLION FOR THE CONSTRUCTION OF A NEW NATIONAL SEED STORAGE LABORATORY IN FORT COLLINS, COLORADO.

B. $50,000 FOR PRELIMINARY PLANNING FOR THE CONSTRUCTION OF A RESEARCH GREENHOUSE FACILITY FOR THE USDA CEREAL CROPS RESEARCH UNIT'S AT THE UNIVERSITY OF WISCONSIN, MADISON AND $500,000 FOR ITS CONSTRUCTION IN FY92.

4. REMOVAL OF AVERAGE MALTING BARLEY PRICE FROM THE BARLEY DEFICIENCY PAYMENT CALCULATION FOR THE 1988 AND LATER BARLEY CROPS.

5. SUPPORT A 1990 FARM BILL WITH A SEPARATE BARLEY SECTION IN TITLE IV-FEED GRAINS THAT WILL ENHANCE THE STATUS OF BARLEY AS A MAJOR U.S. CROP. Specifically the NBIC supports the following.

A. Barley acreage limitation programs determined by barley supply and demand, not corn supply and demand.

B. Mandated inclusion of barley as an eligible commodity for deficiency payments. Currently, eligibility is at the discretion of the Agriculture Secretary.

C. Barley Target Prices to be calculated based on the national average cost of producing a bushel of barley plus ten percent for management and family labor. Basing target prices on the economic cost of production would ensure that all commodities would be treated equally in the farm program. Barley loan prices to be set at market clearing level.

Additional information on barley in the U.S. and these topics is included in this folder. Your consideration and assistance in meeting these objectives will be greatly appreciated.

Sincerely,

Steven E. Ullrich
Chairman

Michael P. Davis
Secretary

WEDNESDAY, MARCH 28, 1990.

RURAL ECONOMIC ASSISTANCE

WITNESS

HON. JOLENE UNSOELD, A U.S. REPRESENTATIVE FROM THE STATE OF WASHINGTON

Mr. WHITTEN. I see our colleague Honorable Jolene Unsoeld. We are glad to have you.

Ms. UNSOELD. Thank you.

Mr. WHITTEN. We try to take our colleagues when they come in so they can get on to other work. We are glad to have you.

Ms. UNSOELD. Thank you very much, Mr. Chairman. I do appreciate this opportunity.

First, I want to thank you for your work last year on Lacamas Lake. You and your committee recommended that the Soil Conservation Service allocate funds under the conservation programs to assist in the cleanup of Lacamas Lake near Vancouver, Washington. That is in progress, and it looks like your assistance is going to put us on the road to a cleanup of that lake, so thank you very much.

Back home our big problem now that we face is timber shortage. Mills are closing, family breadwinners are losing their jobs, and communities are on the brink of bankruptcy. We need relief. I believe that relief is spelled D-I-V-E-R-S-I-F-I-C-A-T-I-O-N.

The rural economic development assistance is really critical to the people at this time. Under the Consolidated Farm and Rural Development Act, the Farmers Home Administration provides grants to facilitate the development of business and industry. For some reason this year the Administration has chosen to zero out the program.

I urge the committee, instead, to give it high priority and help families whose communities might otherwise be hard to hold together.

In addition, my colleague, Mr. Morrison, was successful in getting the passage of the National Forest-Dependent Rural Communities Economic Diversification Act—what a title. I commend his work on that.

His bill, which was title 9 of the Rural Economic Development Act, will tap the Forest Service employees' expertise to assist the small towns in finding economic development grants and resources. His bill requests funding for this program in an amount equal to 5 percent of the forest receipts in any given year.

It is not clear whether this program will be funded under the Agriculture or the Interior Appropriations Subcommittee, but should it come before you I would ask please that you give it favorable consideration.

When you consider how to use the very scarce appropriation dollars that I know you are trying to balance, please remember the Federal commitment to communities in and around national forests and how they will suffer from changing Federal policies regarding the management of our public land. I urge the committee to assist them by increasing the funding to help them to adjust to a

new and diversified future, which clearly is what has to be in their future if they are going to survive.

Another avenue that is available to help rural communities is to strengthen the existing economy through forestry incentives programs. There are two programs that are particularly important. The first, the forestry incentives program—or FIP—is well-respected and certainly a fully-used program funded through the Agricultural Stabilization and Conservation Service.

The goal of this program is to encourage the development, management, and protection of nonindustrial, private forest lands to increase the production of timber and enhance other forest resources. FIP provides low-interest loans and matching funds for woodlot owners to reforest and improve their timberlands. It is important.

One of its only drawbacks is its inability to reach all of the woodlot owners who would like to participate. At the $12.4 million level, FIP estimates it can plant trees on 175,000 acres and improve stands on another 34,000. Thus, the more money that FIP gets, the more trees that will go into the ground and begin growing for future generations and providing oxygen for this one.

For the first time in the last five years, the Administration has requested funding for FIP. I urge the committee to invest in our future by providing for more funds for that program.

In addition, the Administration is proposing the "America the Beautiful" program. I fully endorse that plan for reforesting our nation. I am enthusiastic about the 50/50 Federal and private cost-sharing match. Should a request for funding come through this committee, I would like to add my name to those who are fully supportive of it.

Finally, I ask that this committee continue to fund the conservation program of the Soil Conservation Service at a high level. This Service's contribution to environmental health and protection really can't be overstated.

Thank you, Mr. Chairman.

Mr. WHITTEN. Thank you very much. We appreciate your appearance. May I say this subcommittee has a long record along the lines you have urged. I am also on the Interior subcommittee, and we tried to look out for forestry through the years. It is a very valuable asset to the nation. We look around and more and more we try to point out that paper money is just paper money our real wealth is the country, itself.

Ms. UNSOELD. That's right.

Mr. WHITTEN. So we try to take care of soil conservation and all those things. I personally have advocated that we change our rules here and identify investment spending separate from day-to-day spending that might last for only 24 hours. I have been unable to get that changed.

The other thing we have is that an average appropriation is on a 12-month basis, so it is hard for folks to plan ahead.

Ms. UNSOELD. Yes.

Mr. WHITTEN. But we have to deal with things as they are. Your heart is right. We agree with you.

Ms. UNSOELD. Thank you very much, Mr. Chairman.

Mr. WHITTEN. Thank you very much.

[The prepared statement follows:]

Statement of Representative Jolene Unsoeld (Wash.)
Before the Rural Development, Agriculture
and Related Agencies Subcommittee of the
House Appropriations Committee
on March 28, 1990

Thank you, Mr. Chairman, for providing me with an opportunity to testify before your Committee. Because the Northwest is facing a serious timber shortage, my funding requests to this Committee will focus primarily on rural economic development and forestry incentives programs. Specifically, I support funding Farmers Home Administration grants, the National Forest-Dependent Rural Communities Economic Diversification Act, the Forestry Incentives Program, and the proposed "America the Beautiful" program.

I first want to thank you for your work last year on Lacamas Lake. This Committee encouraged the Soil Conservation Service to allocate funds under its Conservation Programs to assist in the clean-up of Lacamas Lake near Vancouver, Washington. The preliminary aspects of the clean-up effort are going well and the restoration of the lake looks likely in the near future. Your assistance with this project was greatly appreciated.

Back home, we face a timber shortage. Mills are closing, family breadwinners are losing jobs, and communities are on the brink of collapse. We need relief. And I believe relief is spelled: D-I-V-E-R-S-I-F-I-C-A-T-I-O-N.

Rural economic development assistance is critical to the people I represent. Under the Consolidated Farm and Rural Development Act, the Farmers Home Administration provides grants to facilitate the development of business and industry. This year, the Administration has chosen to "zero-out" this program. I urge the Committee instead to give it high priority and help families whose communities might be hard to hold together without it.

In addition, my colleague from Washington, Rep. Morrison, was successful this year in seeing passage of the National Forest-Dependent Rural Communities Economic Diversification Act. I commend his work. His bill, which was Title 9 of the Rural Economic Development Act, will tap Forest Service employees' expertise to assist small towns in finding economic development grants and resources. His bill requests funding for this program in an amount equal to 5% of forest receipts in any given year. It is not clear whether that program will be funded under the Agriculture or Interior Appropriations Subcommittee. Should it come before this Committee, I strongly urge full funding.

When you consider how to use our scarce appropriations dollars, please remember the federal commitment to communities in and around National Forests that will suffer from changing federal policies regarding the management of our public lands. I urge the Committee to assist them by increasing funding to help them adjust to a new and diversified future.

Another avenue available to help rural communities is to strengthen the existing economy through forestry incentives programs. Two programs are particularly important. The first, the

Forestry Incentives Programs or FIP, is a well-respected and fully-used program funded through the Agricultural Stabilization and Conservation Service. The goal of this program is to encourage the development, management, and protection of nonindustrial, private forest lands to increase the production of timber and enhance other forest resources. FIP provides low-interest loans and matching funds for woodlot owners to reforest and improve their timberlands.

One of FIP's only drawbacks is its inability to reach all of the woodlot owners who would like to become part of the program. At the $12.4 million level, FIP estimates it can plant trees on 175,000 acres and improve stands on 33,900 acres. Thus, the more money FIP gets, the more trees will go into the ground and begin growing timber for future generations and providing oxygen for this one! For the first time in the last five years, the Administration has requested funding for FIP. I urge the Committee to invest in our future by providing more funds to the FIP program.

In addition, the Administration is proposing the "America the Beautiful" program. I fully endorse this plan for reforesting our nation. I am particularly enthusiastic about the 50%/50% federal/private cost-sharing proposal. Should a request for funding come through this Committee, I wish to add my name of those fully supportive of it.

Finally, I urge this Committee to continue to fund Conservation Programs for the Soil Conservation Service at a high level. The Service's contribution to environmental health and protection cannot be overstated.

Thank you, Mr. Chairman, for your time and interest.

WEDNESDAY, MARCH 28, 1990.

SYSTEMATIC ENTOMOLOGY LAB

WITNESS

JACK D. COLEY, ASSOCIATION OF SYSTEMATICS COLLECTIONS

Mr. WHITTEN. Next we will hear from Mr. Jack D. Coley.

Mr. Coley, we are glad to see you.

Mr. COLEY. Thank you, sir.

Mr. Chairman and members of the committee, it is a pleasure to be back again this year. As my written testimony will state, I am the State Entomologist for the Mississippi Department of Agriculture. I am here today representing the Association of Systematics Collections on behalf of the Systematic Entomology Laboratory.

I am here today, Mr. Chairman, to thank the committee for providing an increment of financial and moral support to the Systematic Entomology Laboratory. It has helped to elevate this organization to a level more consistent with its important agricultural missions.

The services provided by the Laboratory have a significant impact on our agricultural programs in Mississippi, as well as throughout the United States. It provides vital research and information that is critical in detection, quarantine, and management of insect pests.

Based on planning and evaluation, the Laboratory has determined that $2 million of annualized funds are required to allow it to supply the research and services for all agriculturally-critical insect groups. Thanks to your efforts, the Lab's funding was increased by $500,000 for this fiscal year. We are grateful for that.

I visited with the Lab this morning, Mr. Chairman. I assure you that the money is being used wisely and well spent.

These increased funds have enabled the Lab to hire a specialist to work with a certain group of moths. This lady is already on hand. She is involved in biological control research that is targeted at minimizing the damage caused by a group of insects that we have in Mississippi, including the rice stalk borer and the European corn borer.

As you know, of course, there are literally thousands of insects that occur throughout the world that could come in to Mississippi or to the United States on a shipment of goods. It is very important that early detection and recognition of these pests be made if they do invade our country.

In fact, as you know, there is an effort to cooperate more effectively with workers from around the U.S. and the world. This new funding has also helped to hire five new support people and has enabled some of the people to buy additional equipment and to carry out field work and to speed up research publications.

In spite of the increase last year, the Lab is still short-funded. We need to dedicate our efforts to try to maintain additional funding of this Lab. In fact, two of the very important scientists that are there now will be retiring at the end of this fiscal year, and replacement of them is doubtful. We are finding, for one thing, that people like that out there are hard to find.

Today there are 23 research people on board at the Lab compared to 29 that they had four years ago in 1986. We can look around at some of the things that are happening. As I mentioned, at any time some other pests could be introduced. The Mediterranean fruit fly problem in the west is one example of what can happen if we allow foreign pests to come in and get established. Even with early detection they can be a problem.

There are literally thousands of groups that could come in and be serious pests to crops anywhere in the United States.

One thing, in closing, is that to aid in the visualization of the work in that Lab we have ordered some coffee mugs that have some outlines of insects on them that are important. Unfortunately, they didn't arrive but they will arrive and we will get them delivered to you people in the next few days.

In closing, I want to tell you again that I am here today to thank you for support that you gave the Lab in the past, and especially this fiscal year. I urge you to continue your assistance. The well-being of the Laboratory is of concern to us in agriculture in the States. I might point out that over the last four years the efforts that we are supporting for this Lab have been supported by at least 32 of the different States in the United States by letters or resolutions. We have resolutions from the National Plant Board and the National Association of State Departments of Agriculture.

I hope that you will continue support. Again, I appreciate being able to come here and thank you for the support of the last year.

Mr. WHITTEN. It is good to see you. We appreciate your testimony. You have heard the statements we have made. We have our problems, but we do the best we can.

Mr. COLEY. Thank you, sir.

Mr. WHITTEN. We are glad to have you here.

[Mr. Coley's prepared statement follows:]

association of systematics collections

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TESTIMONY OF JACK D. COLEY
for the
ASSOCIATION OF SYSTEMATICS COLLECTIONS

in support of the

SYSTEMATIC ENTOMOLOGY LABORATORY
AGRICULTURAL RESEARCH SERVICE

...presented to the Subcommittee on Rural Development, Agriculture, and Related Agencies of the Committee on Appropriations, U.S. House of Representatives...

March 28, 1990

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Director
Bishop Museum
PO Box 19000-A
Honolulu, HI 96817

Vice President
James E. King
Director
Carnegie Museum
of Natural History
4400 Forbes Avenue
Pittsburgh, PA 15213

Treasurer
Lisle I. Hedrick, Jr.
Chief
Illinois Natural History Survey
607 East Peabody Drive
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William P. Clench
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Smithsonian Institution

Patricia Hoenigen
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Director
University of Georgia
Museum of Natural History

F. Bruce McMillan
Director
Illinois State Museum

Director
University of Illinois
Museum of Natural History

Executive Director
Diane Hodgkins

Jack D. Coley is State Entomologist for Mississippi and Director of the Division of Plant Industry, Mississippi Department of Agriculture and Commerce. Mr. Coley is one of the nation's leading entomologists. He has thirty years' experience with the Mississippi Department of Agriculture. He is an expert on regulatory and agricultural entomology and a leader in ensuring the safe use of pesticides in pest control programs. He plans, implements, and directs state regulatory programs to protect crops against the introduction of injurious pests. He has worked closely with the Mississippi legislature on groundwater protection programs and has worked to improve relationships with foreign governments relative to shipping agricultural commodities.

Mr. Coley received a Masters' Degree from Mississippi State; he is a Registered Professional Entomologist.

My name is Jack Coley, I am the State Entomologist for Mississippi and director of the Division of Plant Industry with the Mississippi Department of Agriculture and Commerce. I am testifying in behalf of the Association of Systematics Collections. I am here to thank you Mr. Chariman and the members of your Committee for providing an increment of financial and moral support to the USDA Systematic Entomology Laboratory at Beltsville, MD. Your support has helped elevate this organization to a level more consistent with its important national agricultural mission. As you know, the Laboratory provides vital research and information that is critical to the detection, quarantine, and management of insect pests. The services and research provided by the SEL have a significant impact on our agricultural programs in Mississippi and throughout the U.S.

Based on extensive planning and evaluation, the Laboratory has determined that 2 million dollars of annualized funds are required to allow it to supply research and services for all agriculturally critical insect groups. Thanks to your efforts, the Lab's funding has been increased by $500,000. We are most grateful for this support and assure you that the money is being well spent. Productivity in the Lab and employee morale are on the rise. The increased funds have enabled a specialist to be hired to address serious agricultural problems in the pyraloid moths. The incumbent already is involved in biological control research that is targeted at minimizing the damage caused by European corn borer. She also provides identification services and taxonomic expertise on this important group of moths. As can be seen from the coffee cups that I have provided, these moths are very similar in appearance. Detailed systematic research is necessary to provide methods for distinguishing the pests from those species that are a natural part of our native habitat. In Mississippi, this group of moths includes such major pests as the sugar cane borer, the rice stalk borer, European corn borer, melon worm, and pickle worm, and is responsible for millions of dollars in damage each year. In fact, no part of the United States is free from the problems created by this group of moths. There are literally thousands of other species of these moths that could wreak havoc across the nation if they entered the U.S. The increased funds also have been used to bolster the level of support to the Lab's other scientists, allowing them to purchase essential equipment, conduct critical field work, speed publication of much needed research results, and cooperate more effectively with workers from around the U.S. and the world. The SEL also has been able to hire 5 new support personnel to aid in the management of the National Insect Collection and to relieve the scientists of some non-technical service and research functions.

In spite of these welcome improvements, the Lab's financial situation is such that the new funds have only begun to address the serious deficiencies that exist. The funding level of each individual scientist is nearly $50,000 below the average of other ARS Labs and the level of technical support, even with the addition of 5 staff, remains only about one third of suppport levels at other ARS laboratories. At the end of FY 90, two scientists covering critical beetle groups will retire and the prospects for replacing them are uncertain. Loss of these scientists will impinge heavily on the

vital programs of state departments of agriculture, APHIS, the Federal Grain Inspection Service and other action agencies. Other important positions that were vacated over the last four years also remain unfilled. Today there are 23 research scientists, down from 29 in FY 86. We remain without much needed expertise in leafhoppers, weevils, leaf mining flies, and beetles of significance in forests. The continued lack of this critical systematic expertise represents a major gamble on the part the American people and American agriculture. For example, a new leafhopper pest could be introduced into the U.S. at any time and go undetected. As the Mediterranean fruit fly problem in the West demonstrates, such pest introductions can be costly even with early detection. The lack of reliable leafhopper identifications and research presents the real possibility that the next shipment of an overseas cargo could contain a colony of an exotoic species of leafhopper that could decimate the crops in Calhoun, Webster, Tate, or Tallahatchie county and we would be unaware of its presence until it was already too late to effectively prevent massive losses! Mr. Chairman, we simply cannot allow this to happen.

To aid in the visualization of the work of the SEL, I am leaving coffee mugs which highlight a few of the literally thousands of insects of significance to Mississippi. Without the work of the SEL, the losses caused by these insects would indeed be the topic of enumerable morning conversations throughout my home state and the rest of the country. This year's banner headlines concerning problems with the Mediterranean fruit fly in California are living testimony to what can happen when a single foreign insect species is allowed to gain a foothold in the U.S. The Systematic Entomology Laboratory provides an absolutely critical link in the chain of events that keep even more of these potentially devastating pests from endangering the livelihoood of agricultural workers throughout America. Time and again, SEL has provided action and regulatory agencies with urgently needed information about possible intrusions of pests. This is an ongoing battle, this year Mediterranean fruit fly, next year, maybe Khapra beetle or Chinese rose beetle or Oriental fruit fly; the list is long and the possibilities frightening. We cannot allow our ability to fight these battles fall prey to financial neglect.

I have come before you today to thank you for your past support and to urge you to continue your assistance with an increase of $1,500,000 in annualized funds to the SEL. The well being of the Systematic Entomology Laboratory is an issue of concern to many agriculturalists throughout the country. Over the last 4 years, our efforts have been supported by individuals from over 32 states and have included resolutions from such important agricultural organizations as the National Plant Board, the National Association of State Departments of Agriculture, and the Entomological Society of America. It is obvious that this is a problem that affects all states and all parts of our society. As such, I hope that every Congressional representative will view this as part of their special responsibility and aid us in solving a need that impacts all facets of American agriculture

WEDNESDAY, MARCH 28, 1990.

FOOD AND DRUG ADMINISTRATION

WITNESSES

HON. JOHN D. DINGELL, A U.S. REPRESENTATIVE FROM THE STATE OF MICHIGAN

DR. LESLEY RESSELL, COMMITTEE ON ENERGY AND COMMERCE

Mr. WHITTEN. I see our colleague the Honorable John Dingell. We would be glad to recognize you at this time.

Mr. DINGELL. Mr. Chairman, I thank you. I will try to be brief. I am hopeful I will be successful.

I am accompanied by Doctor Lesley Ressell, who is one of our health specialists—and a very capable one—on the Committee on Energy and Commerce.

For the record, Mr. Chairman, my name is John D. Dingell. I am a Member of Congress from the 16th District. I thank you for your courtesy and I thank you for the privilege of being here today.

I also want to thank you and this committee for the help that you extended to the Food and Drug Administration last year. I wish to ask your help again this year, and I do so with a comfortable feeling that I am dealing with a friend and one who is sympathetic to the basic goals of the Agency.

You and this committee have been valuable allies in efforts to rebuild public confidence in the FDA and to see that it is an agency that carries out the mission which we want it to, which is to protect the health of the American people.

The FDA is, I think, our most important public health agency. It oversees one-quarter of the Gross National Product of the United States. It is charged with the protection of the health of the American people in many ways: by ensuring that drugs, devices, and vaccines are safe and effective; by monitoring the quality and the wholesomeness of the food we eat; and by assuring that devices of different kinds—such as X-ray machines—operate to standards, and that new diagnostic tests are accurate.

Many of the Agency's activities stem from unexpected problems: glass in baby food, deliberate tampering with foods and medicines, illness and death from food supplements, outbreaks of food poisoning due to contaminated food. We expect FDA to attack all of these problems at one time and to continue to deal with the routine responsibilities which they have in dealing with one-quarter of the production of the United States in terms of goods and services.

The FDA's regulatory actions also affect the domestic and international competitiveness of the United States' pharmaceutical industry. This is an innovative and diverse industry. It contributes to the health of our people and to the vitality of the American economy. It deserves effective, timely, and fair regulation.

Furthermore, FDA provides international leadership and guidance in product approval systems, food monitoring programs, and the regulation of biotechnology products. These contributions will become increasingly important as Europe 1992 draws near.

We all know that FDA has faced recent problems of very serious character. Our Committee has investigated them, and I will say

that we have done so quite ruthlessly. This has not been because of ill will towards the Agency, but rather from the desire to see to it that the Agency has the ability to carry out the missions that are assigned it, that it has the money and the personnel, and that it has basic statutes which enables it to carry out its responsibilities.

We also want to see to it that the Agency has the kind of leadership and the orientation which make it possible for it to be a success and justify the important trust which it is given by the Congress and the American people.

The nation cannot withdraw the FDA's important mandates. In fact, we are going to have to continue to expand them with increased responsibilities for food safety, nutrition labeling, seafood inspection, and a demand for better enforcement of current authorities.

The Agency also needs more resources to improve its ability to recruit and retain well-trained people, and to purchase modern data management systems.

Its laboratory facilities, laboratories, and headquarters are grossly inadequate. Its pay scale, the number of people which it has, its ability to respond, and the quality of its supervision all are deficient. Most of this is tied to money.

The President's fiscal year 1991 budget was a good beginning in terms of the funds that will be needed, but it is only a beginning and, regrettably, is a rather sadly inadequate one.

I hope that your committee will use these budget figures as a guideline in developing your own. In particular, I would ask for the support needed to expand the seafood inspection program at FDA.

I am keenly aware of the budget constraints on you, Mr. Chairman, and on this committee. I want you to know that I share them. I would not be here to bother you about a matter of this importance if I didn't think that it needed both your attention and mine.

We know that FDA is going to continue to need money into the future—and into the far foreseeable future.

Mr. Chairman, I know that you do not like user fees, and I do not, but the time has certainly come for us to think about them with considerable seriousness. I would never support user fee proposals that did not require that all the funds collected go directly into the Agency, or for which the regulated industry did not see real benefits such as better Agency services.

I am committing to ensuring that the fish industry is not placed at a disadvantage by having to pay user fees that are not paid by the meat and poultry industries.

I would point out that there is a possibility of significantly improving the quality of services and the ability of FDA to respond to major needs by seeing to it that modest charges are imposed upon those who use its services.

And certainly the element of public trust and public confidence will be significantly enhanced by having FDA be so enriched in terms of its structural support.

I would say that I intend to start moving on this within our committee as soon as circumstances permit and we have held initial discussions with the Administration. I can use the benefit of your counsel and I will seek it as we try to work these matters out so that we can build and make better and stronger the FDA.

I am not talking about bigger simply for the sake of being bigger or spending more money or having more people—like you, I reject that as one of the functions of government. But to see to it that it has the capacity to carry out its terrible responsibilities in an increasingly difficult world I believe is going to require that we do something in the area of assuring that it has the funds through essentially a program of user charges to be imposed upon the manufacturer and passed ultimately on through and to the American consumer.

You have been most helpful in the past, Mr. Chairman, and your leadership is deeply appreciated. Your help and your support certainly will be essential to a viable agency and to any viable agency proposals in the year 1991 and on into the future.

I thank you for the courtesy of permitting me to appear here and for your kindness in considering these thoughts.

Mr. WHITTEN. We appreciate your appearance here and your cooperation in this overall problem. You do a great job in so many directions.

Some things are just so big that it is hard to get your hands on them, as you well know. With the Food and Drug Administration we do have a problem, and if we are to have user fees certainly it should be tied down. Under present conditions—we have said this before—the fee goes in the general funds of the treasury and it doesn't go for the purpose intended. I don't know what we can do, but we welcome your advice and your cooperation and the activity of you and your committee to get a handle on this thing.

There are a whole lot of things that we have problems with. One of our major problems is public opinion. Certainly we don't want and we never said we want anything used that isn't perfectly safe. But with the Delaney Clause which calls for zero tolerance, as I was pointing out earlier, we are subject to operating just on sufferance. They could knock anybody out of business tomorrow if they wished to under existing law because under the Delaney Amendment it calls for zero tolerance as far as additives are concerned.

Mr. DINGELL. I am aware of that.

Mr. WHITTEN. In the testimony prior to you we heard about the insects and what they have done. Years ago with the fire ant they let us use one treatment which made them fat but they wouldn't let us use something to get rid of them. They are spreading all over the country. It is dangerous to human health—not just cattle, but to people.

We will do the best we can. Thank you for your appearance and your cooperation and your help.

Mr. DINGELL. Mr. Chairman, thank you for your courtesy. It is a privilege to be here.

[Mr. Dingell's prepared statement follows:]

STATEMENT OF

THE HONORABLE JOHN D. DINGELL

BEFORE

THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND

RELATED AGENCIES

MARCH 28, 1990

Mr. Chairman, members of the Subcommittee, I appreciate this opportunity to testify on the need for increased resources for the Food and Drug Administration (FDA). I am here to thank you for all of the help you extended to the Agency last year and to ask your help again this year. You have been valuable allies in efforts to rebuild public confidence in the FDA.

The FDA is our most important public health agency. It oversees one-quarter of our Gross National Product, and is charged with protecting the public health in a myriad of ways:

-- BY ENSURING THAT DRUGS, DEVICES AND VACCINES ARE SAFE AND EFFECTIVE;

-- BY MONITORING THE QUALITY AND WHOLESOMENESS OF THE FOOD WE EAT; AND

-- BY ENSURING THAT X-RAY MACHINES OPERATE TO STANDARDS AND THAT NEW DIAGNOSTIC TESTS ARE ACCURATE.

MANY OF THE AGENCY'S ACTIVITIES STEM FROM UNEXPECTED PROBLEMS SUCH AS GLASS IN BABY FOOD; DELIBERATE TAMPERING WITH FOODS AND MEDICINES; ILLNESS AND DEATH FROM FOOD SUPPLEMENTS; AND OUTBREAKS OF FOOD POISONING DUE TO CONTAMINATED FOOD. WE EXPECT THE FDA TO TACKLE ALL THESE ISSUES AND MORE.

THE FDA'S REGULATORY ACTIONS ALSO AFFECT THE DOMESTIC AND INTERNATIONAL COMPETITIVENESS OF THE U.S. PHARMACEUTICAL INDUSTRY. THIS INNOVATIVE AND DIVERSE INDUSTRY CONTRIBUTES BOTH TO THE HEALTH OF THE AMERICAN PEOPLE AND THE VITALITY OF THE AMERICAN ECONOMY. THE INDUSTRY DESERVES EFFECTIVE AND TIMELY

REGULATION. FURTHERMORE, THE FDA PROVIDES INTERNATIONAL LEADERSHIP AND GUIDANCE ON PRODUCT APPROVAL SYSTEMS, FOOD MONITORING PROGRAMS, AND THE REGULATION OF BIOTECHNOLOGY PRODUCTS. THESE CONTRIBUTIONS WILL BECOME INCREASINGLY IMPORTANT AS EUROPE '92 DRAWS NEAR.

WE ALL KNOW THAT THE FDA HAS FACED SEVERE PROBLEMS IN RECENT YEARS. WITH SCANT RESOURCES, THE AGENCY HAS HAD TO CONFRONT AIDS, CYANIDE IN GRAPES, ALAR ON APPLES, INADEQUATE REGULATION OF MEDICAL DEVICES, AND A GENERIC DRUG SCANDAL OF ENORMOUS PROPORTIONS. WHILE THESE PROBLEMS MAY NOT DERIVE DIRECTLY FROM A LACK OF RESOURCES, THEY ARE CERTAINLY EXACERBATED WHEN DOLLARS AND PEOPLE ARE SCARCE, AND THE AGENCY MUST ROB PETER TO PAY PAUL.

WE CANNOT WITHDRAW THE FDA'S MANY IMPORTANT MANDATES. IN FACT, WE LOOK TO EXPAND THEM, WITH INCREASED RESPONSIBILITIES FOR FOOD SAFETY, NUTRITION LABELING, AND SEAFOOD INSPECTION, AND A DEMAND FOR BETTER ENFORCEMENT OF CURRENT AUTHORITIES. THE AGENCY

ALSO NEEDS MORE RESOURCES TO IMPROVE ITS ABILITY TO RECRUIT AND RETAIN WELL-TRAINED PEOPLE AND TO PURCHASE MODERN DATA MANAGEMENT SYSTEMS.

THE PRESIDENT'S FY 1991 BUDGET IS A GOOD BEGINNING IN TERMS OF THE FUNDS THAT WILL BE NEEDED. I HOPE THAT YOUR SUBCOMMITTEE WILL USE THESE BUDGET FIGURES AS A GUIDELINE IN DEVELOPING YOUR OWN. IN PARTICULAR, I WOULD LIKE TO ASK FOR THE SUPPORT NEEDED TO EXPAND THE SEAFOOD INSPECTION PROGRAM AT FDA.

WE ALL KNOW THAT THE FDA WILL CONTINUE TO NEED MORE MONEY IN THE FORESEEABLE FUTURE. MR. CHAIRMAN, I KNOW THAT YOU DO NOT LIKE USER FEES -- I DON'T LIKE THEM MYSELF -- BUT THE TIME HAS COME TO THINK ABOUT THEM SERIOUSLY. I CERTAINLY WOULD NEVER SUPPORT ANY USER FEE PROPOSAL WHICH DID NOT REQUIRE THAT ALL FUNDS COLLECTED GO DIRECTLY TO THE AGENCY, AND FOR WHICH THE REGULATED INDUSTRY DID NOT SEE REAL BENEFITS, SUCH AS BETTER AGENCY SERVICES. I AM ALSO COMMITTED TO ENSURING THAT THE FISH

INDUSTRY IS NOT PLACED AT A DISADVANTAGE BY HAVING TO PAY USER FEES THAT ARE NOT PAID BY THE MEAT AND POULTRY INDUSTRIES.

I HOPE TO HAVE THE BENEFIT OF YOUR ADVICE AND COUNSEL AS WE WORK OUT WHAT, IF ANYTHING, WE CAN DO TOGETHER TO REBUILD THE FDA. YOUR HELP AND SUPPORT WILL BE ESSENTIAL TO ANY VIABLE PROPOSAL IN FY 1991, AND ON INTO THE FUTURE.

WEDNESDAY, MARCH 28, 1990.

SUSTAINABLE AGRICULTURE

WITNESSES

DR. DENNIS KEENEY, IOWA STATE UNIVERSITY
JOHN HABERERN, RODALE INSTITUTE

Mr. WHITTEN. Now we will hear from Dennis Keeney.

Mr. KEENEY. Thank you, Mr. Chairman. We will start off with John Haberern, who is the president of Rodale Institute.

Mr. HABERERN. Thank you, Dennis.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your presentation. We would ask you to touch the high points, please.

Mr. HABERERN. Thank you.

Chairman Whitten, as Dennis said, I am John Haberern, President of the Rodale Institute, a nonprofit research, demonstration, and education organization in agriculture located in Emmaus, Pennsylvania. I appreciate this opportunity to testify on the need for funding a national training program in sustainable agriculture through the U.S. Department of Agriculture's Extension Service.

Ever since the inception of the Rodale Institute and the Rodale Research Center we have been working directly with farmers to try to help them with information and research to explore production options which are profitable yet have a positive effect on the environment and the natural resource base. Our work started many, many years ago and is culminating today in what is known as sustainable agriculture and the LISA program.

From the very beginning, farmers told us that even though they wanted to try new systems and techniques, they couldn't get much information, or it wasn't in the format that was practical and easy to apply to their operations—farmers like Vaughn Edwards, who farms 400 acres of corn, soybeans, and wheat in Terra Haute, Indiana. Vaughn told our New Farm Magazine recently, "We have got a lot of information on cover crops and the like at the universities that could be used to help sustainable farming systems. Some of that information is starting to get out, but it is not getting applied." Or farmer Mark Graeber, who farms 800 acres of corn, soybeans, oats, and Alfalfa in Delevan, Illinois, who said, "We need to use more Federal money to fund Extension to promote sustainable practices. Extension isn't doing it now."

Other farmers are saying the same thing, but so is the recent GAO report entitled Alternative Agriculture: Federal Incentives and Farmers' Opinions. One of its conclusions was "a great deal of technical information on particular alternative practices is currently available, but much of it is fragmented and not well integrated or accessible to farm producers."

And, of course, the National Academy of Science's report on alternative agriculture reported "without additions to existing programs and new research and educational initiatives, the current system will not be able to provide farmers the kind of information, managerial assistance, and new technologies needed to support widespread adoption of alternative agricultural practices. An effec-

tive alternative agricultural research program will require the participation of and improved communication among problem-solving and systems-oriented researchers, innovative farmers, farm advisors, and a large cadre of extension specialists.

What to do about this dilemma?

Extension is the proven system set up to get information to and from farmers. So, Dennis Keeney and I decided to meet with Extension Director Myron Johnsrude to see if we could put together the strengths of Rodale, the Leopold Center, other institutions, and Extension to develop a meaningful, nationally-coordinated program. We got a very positive reaction from Doctor Johnsrude.

Thus, we are requesting an annual appropriation of at least $5 million for a national training program on sustainable agriculture as proposed by Senator Leahy in the Sustainable Agriculture Research and Education Act of 1990. This training program is designed to add value to the present Extension efforts by providing a special focus on sustainable agriculture, preparing farmer-friendly materials, assisting researchers and farmers as well as Extensionists, to improve communication skills, and expanding the system with the integration of farmers and public and private sector organizations into the process.

Two national training center sites are proposed. They will be located at existing facilities so that no funds will need to be allocated for facility construction. It is hoped that the Extension Service will give strong consideration to establishing the centers at the Rodale Research Center in Kutztown and the Leopold Center for Sustainable Agriculture in Ames, Iowa.

With that I will close and turn the rest of our time over to Doctor Keeney.

Mr. WHITTEN. May I say I notice you have got a rather lengthy statement. We have folks who have been waiting all afternoon and we will ask you to hit the highlights.

Dr. KEENEY. Yes, sir, Mr. Chairman. We will hit it quickly.

Mr. WHITTEN. I'm taking a little time to ask if sustainable agriculture means free from going broke or what? What is sustainable?

Mr. HABERERN. It means sustaining profitability——

Mr. WHITTEN. So you can keep it so with government programs or what?

Mr. HABERERN. We think it can be kept sustainable without total reliance on——

Mr. WHITTEN. Do you mean income or direct payment from the government? What do you mean by that?

Mr. HABERERN. We mean sustainable in terms——

Mr. WHITTEN. It is curiosity on my part.

Mr. HABERERN. We mean sustainable in terms of profitability and natural resource sustainability. We don't view——

Mr. WHITTEN. I was trained to pick up words, so I just wondered what you meant.

Dr. KEENEY. Mr. Chairman, the concept of sustainability has confused a lot of people, and we have continuing discussions on that.

Mr. WHITTEN. Sustainable for about $5 million worth?

Go ahead.

Dr. KEENEY. I am Dennis Keeney. I am director of the Leopold Center for Sustainable agriculture at Iowa State.

Mr. WHITTEN. Hit the highlights if you will. The whole statement will be in the record.

Dr. KEENEY. Right. I would just like to support what John has said in terms of the high level of interest in the agricultural community on sustainable agriculture practices and the fact that we don't really have these systems packaged the way they should be presented to the farming community. We feel that a focus on a training center approach will help very much to train the trainers, to help Extension move these technologies out into the actual area—with SCS, but private industry can also be trained just as well—and having these focused in two or three centers will help a lot. I think one-on-one takes a lot of time and a lot of money. So we are hoping that this kind of a program can go forward.

Mr. WHITTEN. I am giving away no secrets, but for 48 years the American farmer could count on the government to give him equal treatment with industry and labor. It cost us about $70 billion during that time. They have quit using that now, and for basic commodities they must sell below cost and depend on a government check. Not only that, but we have section 32 of the AAA Act where 30 percent of the import duties were made available to support prices and support exports which has been used for consumer programs. We have had 300,000 farmers go broke in the last ten years.

That was the reason I was asking you about sustainable. We have spent over $170 billion since we changed policies and programs. Now they brag about the exports. Well, the exporters are getting the check, not the farmers, but it is charged to the farmers.

And then we have got a whole lot of international name brands that we pay them money to advertise and charge to the farmer.

I don't know what the answer to it is. I know what I think. But I hope we can sustain the farmer, too.

Thank you very much.

Dr. KEENEY. Thank you very much.

Mr. HABERERN. Thank you, Mr. Chairman.

[The prepared statements follow:]

JOHN HABERERN
PRESIDENT

RODALE INSTITUTE
222 MAIN ST.
EMMAUS, PA 18049

STATEMENT OF

John Haberern
President
Rodale Institute

to the
House Committee on Appropriations
Subcommittee on Rural Development, Agriculture,
and Related Agencies

March 28, 1990

Mr. Chairman and members of this Subcommittee, I am John Haberern, President of the Rodale Institute, a nonprofit agricultural research, demonstration and education organization located in Emmaus, Pennsylvania. I appreciate this opportunity to testify on the need for funding a National Training Program in Sustainable Agriculture through the U.S. Department of Agriculture's Extension Service.

As you are aware, American farmers are the most productive in the world. However, they face many problems today which threaten the future viability of farming. They face continuing problems of profitability and competitiveness and are now confronted with the need to produce food and fiber in ways that pay more attention to water quality, soil erosion, pesticide residues, worker health and safety, and other environmental issues.

The agriculture research system continues to yield an extraordinary array of scientific information and technology that has made our farmers very productive. However, emerging knowledge about potential longterm effects on the environment and human health associated with some agricultural practices, coupled with concerns for long run sustainability and viability suggests the need for new research and information priorities.

Yet considerable information does exist, and much research is available to provide optional production practices to farmers. In fact the U. S. Department of Agriculture has identified $106.1 million of sustainable agriculture research within the Agricultural Research Service and $68.1 million in Federal support for sustainable agriculture programs at the land-grant universities.

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However, the results of this almost $180 million in research plus new information coming from the LISA program does not always get to the farmers in timely farmer ready packages. GAO recently interviewed 74 farmers, with a median acreage of 885 acres, in selected counties in Georgia, Illinois, Iowa, Kansas, North Carolina, South Dakota and Wisconsin for their recently released GAO report entitled Alternative Agriculture: Federal Incentives and Farmers' Opinions. The report states, "Although research has suggested that conventional agriculture damages the environment and alternative agriculture can reduce such damages, knowledge of these findings is not reflected in the farmers' statements."

The National Research Council's Board on Agriculture in their 1989 report on Alternative Agriculture states, "Without additions to existing programs and new research and educational initiatives, however, the current system will not be able to provide farmers the kind of information, managerial assistance, and new technologies needed to support widespread adoption of alternative agricultural practices. An effective alternative agricultural research program will require the participation of and improved communication among problem-solving and systems-oriented researchers, innovative farmers, farm advisers, and a large cadre of extension specialists."

Thus, we are requesting an annual appropriation of at least $5 million for a National Training Program on Sustainable Agriculture as proposed by Senator Leahy in The Sustainable Agriculture Research and Education Act of 1990. This training program is designed to add value to the present extension efforts by providing a special focus on sustainable agriculture, preparing farmer-friendly materials, assisting researchers and farmers as well as extensionists to improve communication skills, and expanding the system with the integration of farmers and public and private sector organizations into the process.

Two National Training Center sites are proposed. They will be located at existing facilities so that no funds will have to be appropriated for facility construction. It is hoped that the Extension Service will give strong consideration to establishing the centers at the Rodale Research Center in Kutztown, Pennsylvania and at The Leopold Center for Sustainable Agriculture in Ames, Iowa.

The National Training Centers will become central locations for extension education on sustainable agriculture, drawing on the research knowledge of the various agencies in the Department of Agriculture, the state agriculture experiment stations, private and public research and educational organizations, and the practical experience of farmers especially those cooperating in on-farm demonstration and research projects. They will provide education and training in sustainable agriculture for extension

agents, experiment station researchers, farmers, and other professionals involved in education and transfer of technical information. The goal will be to develop an understanding, competence, and ability to teach and communicate the concepts of sustainable agriculture among farmers and others they serve.

Farming is a high-risk profession, making farmers more likely to pay attention to new information when it is provided by their peers. Farmers who are using sustainable farming practices become the most important trainers and mentors for other farmers. Their diverse practical experience, including both successes and failures, can give the learning process a special dimension of reality and credibility. The training of trainers is the output on which the success of the program will be ultimately judged.

The National Training Program in Sustainable Agriculture will be organized and administered jointly by the two Centers and the U.S. Department of Agriculture's Extension Service. On-site education at the Centers as well as education at other locations including land-grant universities, experiment stations, and demonstration farms will be part of the program. The training staff will be drawn from the centers, the land-grant universities research and extension staffs, and others within the respective region where the training occurs. The program will offer intensive instruction programs lasting up to several weeks and involving classroom and field work. Workshops and short courses designed to familiarize participants with the concepts of sustainable agriculture will also be offered.

In closing, I would like to thank the members of this Subcommittee and the other members of Congress who have been so supportive of the Low-Input Sustainable Agriculture (LISA) research program funded through the U.S. Department of Agriculture's Cooperative State Research Service. I hope that we can continue to count on your support for the LISA program and for an additional $5 million for the Extension Service's proposed National Training Program in Sustainable Agriculture.

Thank you. I am willing to respond to questions or comments.

STATEMENT OF

Dennis Keeney
Director
The Leopold Center
for Sustainable Agriculture

to the
House Committee on Appropriations
Subcommittee on Rural Development, Agriculture,
and Related Agencies

March 28, 1990

Mr. Chairman and members of this Subcommittee, I am Dennis Keeney, Director of the Leopold Center for Sustainable Agriculture at Iowa State University, Ames. The Leopold Center is a state funded center that directs competitive grant research, interdisiciplinary research, and outreach in sustainable agriculture. I welcome the opportunity to testify to the need for funding a National Training Program in Sustainable Agriculture through the U.S. Department of Agriculture Extension Service.

There are many technologies available today that could, if properly packaged in systems adapted to the farming community, markedly reduce dependence on agricultural chemicals. Further research, such as that being done with the Leopold Center, will soon be available to enhance the effectiveness of these packages and bring even more efficient resource enhancement and enviromental protection to the farm enterprise.

Many of these technologies are either on the shelf or in the minds of the researchers and farmers. The Training Centers will make these packages available in usable form to extention agents and specialists, SCS personnel and agricultural consultants and dealers.

In the past we have relied on research - extension - private industry partnerships to transfer best management practices to the users. The system concepts of sustainable agriculture are far more complex to teach and require farmers to help transfer the knowledge. I feel only a concerted approach as offered by the Training Centers can assure that these new technologies will be adapted to teaching at the farmer level by those most qualified to reach the farming community.

I am most appreciative of the LISA initiative and the much needed increased funding. It is now time to expand on LISA by ensuring that technology is developed into teachable materials and transferred effectively to the farming community.

Thank you. I am willing to respond to questions or comments.

Dennis Keeney
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WEDNESDAY, MARCH 28, 1990.

RURAL REHABILITATION PROGRAMS

WITNESS

TERRY WILLKOMM, NATIONAL EASTER SEAL SOCIETY

Mr. WHITTEN. Ms. Terry Willkomm?

Ms. WILLKOMM. I am glad to be here. Thank you.

I am Terry Willkomm, and I am here on behalf of the National Easter Seal Society to discuss some of the issues facing farm families who are affected by physical disabilities.

Currently I am the director of the Farm Family Rehabilitation Management Program, which is part of the Iowa Easter Seal Society. This is a community-based grass roots approach in providing on-site rural rehabilitation services.

You have my testimony. I want to just highlight the key issues.

Mr. WHITTEN. We would be glad to have you do so.

Mr. WILLKOMM. Thank you.

There are 520,000 agricultural producers throughout the country that have permanent physical disabilities which affect their ability to complete essential farm tasks. Farming is the most hazardous occupation in the United States, with 160,000 producers becoming injured each year as a result of farm accidents. Many times these accidents result in severe amputations, head injuries, and other injuries.

In addition, we have another half a million farmers and farm family members who are affected by other types of disabilities not related to the farm. Car accidents and motorcycle accidents account for a high number of spinal cord injuries, head injuries, and other types of injuries.

Other disabilities include multiple sclerosis, muscular dystrophy, cerebral palsy, strokes, cardiovascular diseases, and other disabilities.

What I find in common is the fact that these families want to continue farming. It is a valued way of life. It is a family working together for a common goal. Many of these families have experienced barriers that prevent them from continuing to farm.

Historically they have not had access to rural rehabilitation services that are available in an urban type of setting. Isolation prevents access to information on technology that is available that would maximize their abilities in returning back to the farm.

Income levels have historically been 20 to 40 percent lower than that of urban residents. Many times this results in the farmer having to make a decision. One is to either get out of farming and look for another occupation that is easier because it is difficult to hire help to perform those tasks that the family no longer can do, or many try to get by with what they have. Many times they make makeshift accommodations that result in further injury to themselves or to family members.

I worked with one farmer who would transferred from his wheelchair into the bucket of a front-end loader, and the loader tractor would lift him up and dump him into the combine. This has resulted in further injuries for some individuals.

Also, children and family members, spouses, and co-workers who are attempting to perform tasks that the individual cannot do—and particularly lifting tasks—have resulted in further injuries and injuries that are happening to family members, themselves.

Another issue and barrier is the fact that traditional medical model approaches do not work. Medical professionals lack an understanding of the agricultural work site and what is possible in an agricultural setting. There is a need for on-site services.

We have made tremendous strides in applied technology and service delivery types of systems.

In terms of technology, I worked with a farmer who was paralyzed from the neck down, and with joystick steering he can now steer a tractor. He does not have the strength to use his arms or his legs.

There are other types of tractor lifts that have been developed. These are grass-roots approaches built by local machine shops.

Another exciting thing is the Iowa program. It is a grass-roots program, as I mentioned. It is people helping people through a Statewide volunteer ingenuity network. It is made up of shoemakers, saddle makers, machine shops, electricians, and carpenters.

This is a retired tinkerer who designed for this farmer, who had his right hand attached to his left arm—and it is only the second successful reattachment of an opposite arm in the country. Unfortunately, there are no tools designed for an upside-down hand. So this retired individual designed all different types of tool modifications so that this farmer could return back to farming.

A machine shop assisted this farmer. His prosthesis was not built for farm tasks and it frequently broke. The machine shop built components out of stainless steel and a local shoemaker redesigned the saddle so that he could milk cows easier.

Again, this is an exciting program. Without applied technology and grass-roots support services, these families would struggle to be able to return back to the farm. Referrals come from the Farm Bureau Women, the Iowa Porkettes, and the Cattlemen's Association. It is a very cost-effective approach. It is people helping people.

The National Society views this as a model program and would like to replicate this program across the country. We urge that funds be appropriated for community-based rural rehabilitation programs.

I appreciate the opportunity to address these issues before the subcommittee.

Mr. WHITTEN. Thank you very much for your appearance. It will certainly have the consideration of the committee.

[The prepared statement follows:]

The Power To Overcome

National Easter Seal Society
Office of Governmental Affairs

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TESTIMONY PRESENTED

to the

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE

AND RELATED AGENCIES

of the

HOUSE COMMITTEE ON APPROPRIATIONS

regarding

Fiscal Year 1991 Appropriations for a Program to Improve

Rural Rehabilitation Services for Farmers With Disabilities

on behalf of

THE NATIONAL EASTER SEAL SOCIETY

Witness:

TERRY M. WILLKOMM

Director, Farm Family Rehabilitation Management Program
The Easter Seal Society of Iowa

Wednesday, March 28, 1990

Good afternoon. My name is Terry Willkomm and I am here on behalf of the National Easter Seal Society to talk about rural rehabilitation and the unique needs of farmers with disabilities. I work for the Easter Seal Society of Iowa, where I serve as director of the Farm Family Rehabilitation Management program. This program was initiated in 1986 to assist farmers who become disabled and their families to accommodate the challenges disabilities present in farm operations and rural life.

The National Easter Seal Society is a nonprofit community-based health agency dedicated to promoting the independence of persons with disabilities. Easter Seals serves individuals of all ages, with all types of disabilities. Last year, more than one million people received Easter Seal services through a nationwide network of about one hundred seventy affiliate societies.

My purpose here today is to bring to your attention the difficult struggle facing thousands of farmers with disabilities who are impeded in their efforts to continue farming because of inadequate access to needed rehabilitation and support services. I will comment on the unique problems facing rural Americans with disabilities and report on the remarkable progress that has been made toward developing farm-oriented assistive technologies and service delivery methods to assist farmers and their families. I will briefly describe the successful approach we have taken to eliminate barriers to farming for Iowa farmers with disabilities which incorporates these innovative assistive technologies and services, and offer some suggestions as to how our experience might benefit rural communities across the country.

I grew up farming in southern Wisconsin. I know that farming is a demanding occupation which requires year-round physical and emotional stamina. Often, the financial returns are uncertain. Yet, for millions of rural American families, farming is a valued way of life. It is working together for a common goal. Farmers are willing to work hard to build their operations for themselves and for their children.

For an estimated 520,000 farmers and ranch workers, farming is complicated by the presence of a disability. Many of these disabilities are the result of farm-related accidents and illnesses. Farming is hazardous. According to the National Safety Council, the high rate of agriculture-related deaths and injuries places farming as significantly more dangerous than other industrial occupations. An estimated 160,000 people are seriously injured in agriculture-related accidents annually.

An additional half-million farm families are affected by other disabling conditions not attributable to farming. These disabilities arise from many causes, including car and recreational accidents, war injuries, diseases, and varied impairments. They frequently impede an individual's ability to perform essential farm tasks and to function independently in a rural setting.

Approximately 70 percent of farmers I work with have non-farm related disabilities. Their disabilities are commonly the result of spinal cord injuries, heart disease, stroke, arthritis, low back pain, post-polio syndrome, cerebral palsy, multiple sclerosis, and vision and hearing impairments. The remaining 30 percent of farmers served by the Iowa program experienced disability as a result of a farm-related accident or illness. Frequently, these disabilities are the result of amputations, head injuries, back injuries, and other serious injuries.

Although the causes of disability among farmers may vary, virtually every farmer who becomes disabled wants to continue farming as a livelihood. Historically, these individuals and their families have had to be self-sufficient in meeting their disability-related needs. They have not had access to rehabilitation and other services available to people in urban areas and, until recently, did not benefit from the application of assistive technology to farm and rural occupations.

As a result, many farmers with disabilities have either been prevented from returning to farming or, more likely, have attempted to make due with grossly inadequate assistance or makeshift accommodations, often to the detriment of their health and that of their families.

One farmer I met was transferring himself from his wheelchair to the bucket of a front-end loader tractor. His son would then raise his dad up to allow him to transfer from the bucket into the top of a huge combine. This system was highly unstable and had been known to cause further injury. To avoid this, we designed a wheelchair lift to safely get this farmer on and off his combine, at a cost of $1,500.

I have also worked with farm family women and co-workers who have become injured because they took on the heavy lifting tasks that farmers with disabilities had previously carried out. Lifts and low cost labor-saving devices were developed to prevent such injuries to farm family members and co-workers.

Serious barriers confront farmers with disabilities seeking to obtain appropriate rehabilitation services to accommodate a disability on the farm. Many of these barriers relate to problems commonly associated with rural areas, where great distances and scarce resources contribute to a sense of isolation and inadequate access to appropriate services.

Traditional service delivery systems generally lack expertise and customized methods to effectively meet the unique needs of farmers and others living in rural settings. Very often these services are not specifically designed for farm life. They also fail to provide for individualized on-site evaluation and service delivery, which is vital to the accommodation of differences in farm operations, worksites, and rural housing.

Another barrier concerns rural isolation. Farmers and ranchers do not have access to information on the availability of assistive technology and rehabilitation services which they need. The severe economic constraints of many farm families constitute additional barriers to needed services. Rural income levels are 20-40 percent lower than for urban residents. Farm families often lack the resources to hire outside help to run the farm and accommodate the impact of disability. Without such help, they must have access to assistive technologies to bridge the gap caused by disability in order to complete essential farm tasks. Otherwise they risk losing their farms.

Health care and rehabilitation professionals frequently lack expertise concerning the nature of farm operations and are ill-equipped to offer appropriate rural rehabilitation solutions to accommodating disabilities in farm and other rural settings.

Tremendous strides have been made in recent years to overcome these barriers through the application of assistive technology in agricultural settings.

For example, these gains include the use of joy stick steering on tractors for a farmer paralyzed from the neck down, with only limited use of his fingers. Or hand tool adaptations for farmers with hand injuries. This tool (HOLD UP TOOL) was made for a farmer with the use of only one arm. It is a one-handed hammer or nail starter, which allows him to make repairs around the farm. This (HOLD UP BRUSH) is a suction scrub brush that attaches to the sink and is used by farmers with hand injuries to clean up after a day of work.

In Iowa, we have been able to eliminate many of these barriers for farmers with disabilities and their families through a statewide, community-based rural rehabilitation program. This program emphasizes family and community involvement in the development and practical use of low cost assistive devices, agricultural worksite adaptations, home modifications, and the creative use of other rural resources. Program staff assist in initiating and coordinating independent living services, health care services, vocational counseling, and follow-up with referral sources for farmers with disabilities and their families.

An ingenuity network of volunteers participate in the program. They provide farmers with peer support to facilitate

adjustment and adaptation to their disability. Volunteers also design and fabricate assistive aids for farming and home use. Their contributions to the program are exciting and invaluable.

For example, a local shoemaker and blacksmith collaborated on modifying an artificial arm for a farmer with an arm amputation that would hold up under heavy duty farm work. This adaptation included a wrist unit made of stainless steel and leather straps to support the use of nylon rope, replacing the usual steel cables which, with daily use on the farm, kept breaking.

A retired tinkerer made a wheelchair-mounted tray for one farmer to hold the business records and papers he needs to manage his farm. A machine shop worker built tractor steps for a farmer with an above-the-knee amputation who had difficulty mounting the tractor. And, through the peer support network, a farmer with a spinal cord injury was provided useful information on tractor lifts by another farmer who had accommodated a similar disability in farming.

These examples of assistive technology application and grassroots support are typical of the Iowa program. For the people I serve, they make the difference in whether or not a farmer with a disability returns to farming.

Thousands of farmers across the country have disabilities and, like the people I just described, are seeking to benefit from rural rehabilitation and assistive technology. Their numbers grow every year.

[illegible] Seal societies report rising demand for rural rehabilitation and assistive technology services for farmers with disabilities. In nearly a dozen states, Easter Seals is exploring opportunities to develop rural service delivery programs like the one pioneered in Iowa.

[illegible] state replication of the Farm Family Rehabilitation Program, the National Easter Seal Society has developed a [illegible] model based on the Iowa approach. This effort is intended to improve access to rural rehabilitation to farmers with disabilities in other parts of the nation.

I urge you to consider an appropriation of funds in fiscal year 1991 to support the implementation and improvement of a community-based rural rehabilitation program to better assist farmers with disabilities and their families to continue farming.

I appreciate the opportunity to appear before the Subcommittee to talk about these important issues and would be happy to answer any questions that you may have.

Thank you.

Special Invited Paper

Technology and Employment for Persons with Disabilities in Rural America

Terry M. Willkomm

It is estimated that there are over 8.5 million individuals with disabilities who live in rural America. (NIDRR, 1987) In agriculture alone, there are over 520,000 farm/ranch workers who have experienced a physical disability. (Field, 1989) Until recently, the application of assistive technology in rural occupations has been largely unrealized. Barriers such as isolation, lack of rehabilitation services, and insufficient finances have been continually experienced by individuals with disabilities in rural areas. This paper will discuss the uniqueness of the rural disabled population; its unique technology and employment needs; current barriers to meeting these needs; and approaches to providing appropriate services.

TERRY M. WILLKOMM, M.S. is the Director of the Farm Family Rehabilitation Management Program, The Easter Seal Society of Iowa, Inc., in Des Moines, Iowa.

The Rural Disabled

The rural work force is primarily comprised of individuals who are employed in an agriculture related industry or small town business that provides services and products to rural families. These families who have been affected by a disability have historically been self sufficient in meeting their needs due to the lack of rehabilitation services that are often available in urban settings. This self sufficiency includes the design and fabrication of one's own assistive devices/modifications.

The rural disabled experience many barriers in obtaining appropriate rehabilitation technologies. Isolation prevents many individuals from obtaining information related to assistive technology. Limited funds due to the lower earning power of rural residents, which has been compounded by the recent rural economic crisis, prevent the purchase of needed technologies. In addition, there are generally fewer job opportunities for persons with disabilities. The Arkansas Rehabilitation Research and Training Center has identified additional barriers that directly or indirectly effect employment opportunities for rural residents. These barriers include: limited educational opportunities (Rural educational institutions often lack adequate facilities, qualified staff, and specialized educational programming and services); restricted transportation (isolation, non-existent public transportation, and low income greatly restrict travel opportunities); attitudes (poor images of those with disabilities and agencies which provide services to those individuals); ethnicity (complications of providing services to individuals with various ethnic subcultures); and health care (shortage of health care professionals and a general absence of preventative health maintenance activities).

The most successful job placement strategy is to return the person back to the job that he or she was currently doing, with or without the use of assistive technology. The majority of these jobs are related to an agricultural business, including: farming, ranching, sales of agricultural products, forestry, vegetable and fruit production, and machinery repair. The tools and work stations of these jobs seldom require the use of high technology equipment such as computers, fax machines, and other information processing equipment. Many individuals employed in rural based occupations are self employed. In addition, many of these businesses are run by the family. Co-workers include, children, spouses, and hired

help. Although these co-workers may not be disabled, their physical ability should also be considered in providing technology related services to continue this family business through job restructuring or adaptive equipment. The average age of a farm is now 50 with an increased number of farmers and farm spouses who are farming over the age of 65. In 1988, the number of farmers who are over the age of 65 and who were served by the Easter Seal Society of Iowa's Farm Family Rehabilitation Management (FARM) Program increased over 100 percent of those served during the previous year.

Special Technological Needs

Work in rural areas is frequently done outside and is affected by varying climate conditions. Individuals with arm or leg amputations, for example, working in this environment, frequently experience failure of prosthetic devices which interferes with the completion of essential work tasks. Examples and causes of prosthetic failure include the wear and tear that dirt causes on prosthetic knee joints; elbow lock and cable breakage on an above elbow prosthesis due to heavy lifting, prosthetic foot breakage due to repetitive climbing up and down off equipment which might include jumping off a step 24 inches from the ground, and myoelectric arm malfunctioning due to excessive moisture. Further research needs to be considered in the development of prosthetic devices used by agricultural producers.

Many individuals who live in rural areas and who have mobility restrictions frequently experience difficulty in ambulating over rough terrain. The rural elderly can experience falls while walking down an unstable gravel driveway to get the mail. Standard cane tips do not provide stability in this type of terrain. Recently, outdoor electric wheelchairs have been built with enough power to climb steep hills and travel over rough, unpaved, and soft surfaces. Unfortunately, these wheelchairs lack adequate suspension, causing individuals who lack upper body stability to experience a very rough ride. Puff and sip controls are very difficult to operate while traveling over rough terrain. In addition, some individuals experience extreme jarring while operating these chairs. Manufacturers who design outdoor wheelchairs need to explore alternative designs which would be more suitable to rural settings.

Labor Saving Devices and Worksite Adaptations on the Farm

Farming is not as physically demanding as it once was. Advances in the design of agricultural equipment and labor saving devices enable someone with a severe disability to remain active in this occupation. For example, new designs of tractors include comfortable cabs with air conditioning and heat, fewer operating controls due to hydrostatic transmissions, independent suspension seats, automatic hitching devices and remote controls, ergonomically designed hand controls, and other labor saving accessories. Adapting a tractor with a lift and control adaptions can enable a farmer who is a C5-C6 quadriplegic to successfully operate this equipment in performing essential field work such as tillage, planting, cultivation, and harvesting. In addition the tractor can be used to feed livestock and to access remote areas of the farm.

Livestock handling facilities can also be adapted to accommodate wheelchairs or other mobility restrictions. The placement of raised decks in hog confinement buildings or the use of milking parlors have benefitted the non-impaired worker as well as the farmer with restricted mobility. In addition, these labor saving devices prevent injuries and increase efficiency of work tasks. Other labor saving devices that make farm tasks easier are powered hand tools such as impact wrenches, power screw drivers, and various types of vise grips. These tools can also be easily adapted for someone with a hand injury.

The use of environmental control units are now becoming a reality on the farm. Communication systems have been developed that enable farmers to monitor what is happening in a remote barn or confinement building from the farm house or in a tractor. Environmental control units developed for the disabled population could be very useful in monitoring and controlling various livestock production activities.

Service Delivery Practices

Providing assistive technology services can be very challenging. Rural service providers are often isolated from available information on worksite adaptations. Traditional service delivery models of assistive technology services are being provided at a hospital or a rehabilitation facility and often do not address the needs of the rural disabled. Many consumers are unable to travel great distances to benefit from these services. Furthermore, the identification of individuals in need of technology services has been difficult. A study conducted by Iowa State University indicated that farm families receive more information on health care related matters through agricultural magazines than any other information dissemination sources. Of the over 200 farm families served through Easter Seal's FARM Program, less than 25% of the referrals have been received through rehabilitation service providers. Agricultural related organizations and media sources continue to be the most effective resource in providing information on assistive technologies and available services.

Not only do rehabilitation/health care service providers lack information on the application of assistive technologies in rural worksites, but also lack an understanding of the worksite. Conducting a job analysis on a farm can be very difficult because of the diverse nature of work tasks and seasonal changes. Farming is still viewed by many service providers incorrectly as an occupation which is physically demanding and unsuitable for a severely disabled consumer. Too often the service provider focuses on the consumer's disability rather than on his/her ability. Providing on-site rehabilitation services can be very costly and timely. There are very few programs in the United States that provide assistive technology services on-site and there are very few trained rehabilitation professionals who are knowledgeable of the various occupations in rural America and who know how to successfully adapt or modify these work environments.

As mentioned earlier, many individuals in rural areas are quite self sufficient. Many times, these individuals only need ideas on what has been tried before in overcoming a similar

barrier. Local machine shops, blacksmiths, saddle makers, and shoe makers have been an excellent resource in construction of needed technologies. Unfortunately, in some rural areas there is a shortage of skilled craftsmen. A community in northwest Iowa and a community in southeast North Dakota stated that the need for a good machinist or blacksmith is equal to the need for a doctor. Many of the skilled craftsmen are over the age of 65 with no one in their community to replace their skills.

Rural Rehabilitation Technologist

The role of the rural rehabilitation technologist should be that of a facilitator to help the individual in clearly defining the specific problem area and in conducting problem solving strategies to develop an effective solution. These strategies include providing consumers with information on commercially available devices and equipment that may be beneficial; safety considerations associated with using technology to complete essential work tasks; ideas on how to design or construct a new device/modification; resource people, places, and materials that can be used in developing a device/modification; and ongoing follow up of the applied technology.

There is an extreme shortage of rural rehabilitation technologists due to limited funding for rural service delivery programs and few qualified professionals. Current educational curriculums for rehabilitation professionals need to be adapted or new curriculums need to be developed which would address the unique needs of the rural disabled and effective service delivery methods. In addition, adequate funding is needed for rural rehabilitation technology programs that will result in increased employment for the severely disabled.

Ingenuity Network

The development of a statewide ingenuity network can enhance the delivery of technology related services in rural areas. This network is comprised of volunteers with expertise in construction, electronics, woodworking, metal fabrication, saddle making, and other skilled trades. In addition, this network includes volunteer procurement specialists (scroungers) who can locate needed materials and who are also successful in obtaining commercially available items at little or no cost.

The timeliness of providing technology related services can be very critical in rural occupations. Agricultural producers cannot afford hired help to complete essential tasks while waiting six months for a tractor to be modified. During spring planting and fall harvest, local machine shops are extremely busy. Mobile rehabilitation engineering shops in Kansas and Virginia have been attempted in providing services to the rural disabled in a timely manner.

Funding of Employment Related Technology

As discussed earlier, persons who live in rural areas have learned to make the best out of limited resources. Traditional worksite adaptations on farms were paid for by the farm families themselves. There existed, and still exists, a sense of pride associated with being self-reliant and not dependent upon charity or government programs. However, this attitude is now beginning to change as the agricultural business changes. Many farm families have benefitted from government programs that provide subsidies for low farm prices. Acceptance of these programs became a part of survival rather than choice. Farmers are now becoming more receptive of State Vocational Rehabilitation services to help fund worksite adaptations such as tractor lifts, modified livestock facilities, and outdoor mobility aids.

Obtaining financial assistance through other sources has been difficult. Of the 240 farmers served by the Iowa Easter Seal's FARM Program, only 10 were covered by wage loss insurance such as Worker's Compensation or long term disability. In addition, these insurance companies did not pay for any worksite adaptations.

The increasing cost of health insurance and decreasing personal income has resulted in an estimated 28% of rural families discontinuing their health care insurance or becoming underinsured. This can prevent funding of durable medical equipment or of a prosthetic device that is also used for completing essential work tasks. In addition, to qualify for Medicaid, personal assets must be less than $2,500. For a farm family, this would require giving up the farm.

Volunteer ingenuity networks have proven to be cost effective but not always efficient, due to the volunteer's time constraints and the distance that one must travel to provide needed expertise.

Conclusion

Technology and employment for the disabled in rural areas continues to be in a developmental process. As consumers, employers, rehabilitation practitioners, and manufacturers develop a better understanding of the unique technological needs of the rural disabled, barriers to meeting needs, and the benefits of assistive technology, attitudes can change and solutions can be developed to overcome these barriers and to maximize one's ability within a rural work environment. These solutions can include the development of new devices and modifications, effective rural service delivery methods, and increased funding for cost effective assistive technology in the work place.

Programs Help Disabled Farmers Reap Ben

By TERRIE NOLINSKE, OTR/L, CO, MA

One of the biggest problems facing farmers with disabilities is lack of information on available equipment and resources that would allow them to continue farming. People living in rural areas must often travel up to 200 miles to obtain health care or rehabilitation services and, due to travel cost and time, may end up going without. While some may be unaware of what appropriate rehabilitation services are, others have no health insurance or may be underinsured so that rehabilitation services like occupational and physical therapy are not covered.

In 1979 a disabled farmer contacted Bill Field at Purdue University, asking for information on agricultural worksite modifications so he could continue to farm. Mr. Field quickly realized little information was available which led to his creation of the Breaking New Ground Resource Center in the Department of Agricultural Engineering at Purdue, now internationally recognized as the primary source of rehabilitation technology relating to agricultural worksites.

As Project Director and Professor in Agricultural Engineering, Mr. Field has worked with health professionals and graduate students, including those in Purdue's agricultural mechanization degree program, to meet the needs of disabled farmers. Mr. Field also hired and worked with Terry Willkomm, whose undergraduate and graduate degrees were in vocational rehabilitation with an emphasis on rehabilitation technology, which complemented Mr. Field's agricultural focus.

Various lifts make transfer easier from tractor to wheelchair.

Modified tools like this one-handed saw offer independence to individuals with disabilities.

Mr. Field and Ms. Willkomm worked to disseminate information in a quarterly newsletter to over 6,000 farmers, rehabilitation centers and health professionals. Finances were and remain a problem but in 1984 the first monies allocated by the federal government for rural rehabilitation technology in agricultural worksites went to Breaking New Ground so video/print resources and workshops could be developed and presented. The center sponsored exhibits throughout the United States and Canada, including a modified tractor on display at the 1987 AOTA Conference held in Indianapolis.

Ms. Willkomm left Breaking New Ground to become the director of the Easter Seal Society of Iowa's Farm Family Rehabilitation Management (FaRM) Program, but continued to collaborate with Mr. Field on projects. They developed audiovisual presentations and resource manuals including "Agricultural Tools, Equipment, Machinery and Buildings for Farmers and Ranchers with Physical Handicaps: Volume One" and "Modified Agricultural Equipment: Manuals for Farmers and Ranchers with Physical Handicaps," which detail tool modifications and equipment, methods of operation, necessary maintenance and safety precautions as well as bibliographies and resources.

While the role of Breaking New Ground had been primarily that of a resource facility (over 6,100 requests, mails from OTs), a grant from the Easter Seal Society of Indiana made it possible to add a service delivery component throughout Indiana effective this September. This means staff will visit farms that have modifications as well as those in need. Mr. Field explained a desire to have an OTR or COTA coordinate this program because of the holistic medical and functional perspective they offer. The project is currently coordinated by Laura Logan, who recently completed her COTA exam and plans to continue working with the project.

OTs have a lot to offer the disabled farmer but sometimes seem to feel intimidated by lack of knowledge about the technical aspects of the farm operation — the jargon, machinery, working procedures and physical demands," said Mr. Field.

To familiarize OTs with farm operations, Mr. Willkomm and Mr. Field co-authored a manual entitled "Agricultural Worksite

# of Technology

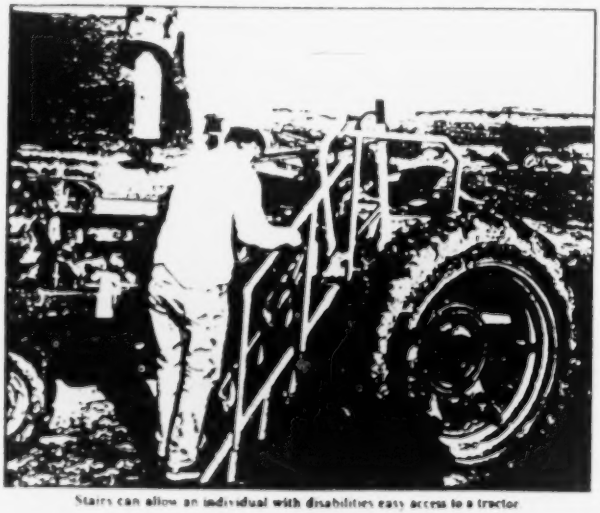
Assessment Tool and User's Guide for Farmers and Ranchers with Physical Disabilities." Since most OTs work with farmers in the hospital and cannot make a farm visit, this assessment tool provides them with many resources including lists of questions to ask about farm operation in order to identify specific barriers which may be encountered once back on the farm, explained Ms. Willkomm. The manual also offers potential solutions to removing those barriers.

In her position as director of FaRM, Ms. Willkomm works with a rural rehabilitation specialist to provide consultations for agricultural worksite modifications, home accessibility and adaptive aids and she coordinates services for independent living, peer counseling, attendant care and community support services. The main focus is on worksite modifications and providing adaptive aids and technology to make tasks easier on the farm and in the home, allowing someone with a disability to remain active in the farming operation.

The most common diagnoses and conditions seen include spinal cord injuries, amputations, low back pain, stroke, post polio, multiple sclerosis, cerebral palsy, arthritis, visual and hearing impairments, cancer, and cardiac and respiratory problems. Only about 20 percent of those seen are injured in farming accidents, primarily the amputees.

To be eligible for services through FaRM, one must be an Iowa resident, live on a farm and have a physical disability.

This below-elbow amputee is independent in many chores, including milking the cow, thanks to equipment modifications.



Stairs can allow an individual with disabilities easy access to a tractor.

While services are provided at no cost to farm families, third party payers such as private insurers, Medicare and Medicaid do not cover these services. Funding sources include vocational rehabilitation, worker compensation, local farm bureau organizations, Pork Producers, the Community Living Foundation, lawsuit settlements, community organizations and manufacturers of assistive technologies.

"The fact that insurance companies do not pay for equipment or worksite modifications has not prevented somebody from getting what he or she needs to return to the farm," Ms. Willkomm emphasized.

About 60 percent of the adaptive aids or modifications needed are made or donated at no cost by community based agencies or individuals. I send out a monthly FaRM Update which has greatly facilitated networking throughout the state. We needed a lift for a child and only had seven so I included a plea in a recent newsletter. Within three days we had five calls from people willing to provide the lift.

The community based involvement in Iowa is strong, where over 100 volunteers throughout the state are willing to design and fabricate assistive aids including a tractor lift, hand controls for the tractor, ramps, one handed cutting boards, and adaptive shower chairs or dining chair lifts.

(See FARM, page 20)

Farmers Kept Working the Land, Despite Disabilities

FARM

(Continued from page 19)

modifications. Ms. Willkomm said she had two people she calls the "scrounggers" because they always locate the hard-to-find items.

"When the inevitable question of liability comes up, I say that people are more likely to sue manufacturers of adaptive aids than they are to sue the neighbor who's built something for them," said Ms. Willkomm. "The volunteer fabricators have clients sign their own waiver of liability form, while Easter Seal has a waiver of liability form that's signed anytime adaptive equipment is given out. We have to recognize the nature of what we're doing here. These adaptive aids or modifications are usually one-of-a kind and provided for a specific reason.

"In the field of engineering it is assumed that products are tested for years prior to being marketed. In rehabilitation engineering many times the only way to test a product is with the client — the trial and error that takes place by the user. Eighty percent of the modifications done or adaptive aids provided need to be modified within a 90 day period, some a week after they're provided, but the bugs have to be worked out. When it comes to the liability in providing these items, we feel immediate follow-up is critical. Easter Seal assumes responsibility for the follow-ups with the client, scheduled at one-, two-, three- and twelve-month intervals after issuing the equipment. Everyone must educate the client and family about the use and care of whatever technology has been applied. Liability issues have not prevented communities from helping each other, but they've definitely raised some concerns about how potential injury can be prevented with any given modification or adaptive aid."

While providing technology is an important part of FaRM, perhaps the greatest service it offers clients is a renewed sense of hope. Disability support groups for clients and families affected by stroke, amputation and spinal cord injury have begun meeting throughout the state. Peer support counselors, themselves disabled, are matched with newly disabled individuals with similar disability to provide ideas in adjusting, surmounting barriers and returning to independent living or farming.

Dennis Theesfield farmed before he became paraplegic from a gunshot wound in Vietnam in 1969. Hospitalized until 1970, it wasn't until 1973 that he again began to farm. For the past two years he has also been a peer counselor with FaRM.

"I didn't think I'd ever farm again. Nobody talked to me about being able to farm with a disability. I had no idea people would even hire someone in a wheelchair," said Mr. Theesfield. "My uncle and cousin thought I could farm and a neighbor told me he'd fix up a lift to get me in and out of my tractor if I'd run his corn picker for him. I was skeptical but finally bought an old tractor, figured out how to get on and

off of it with an old wagon hitch. I worked with them for about a year and finally figured if I could do it for them I could farm on my own."

With the help of friends Mr. Theesfield did just that and even put a trolley on a 40-foot beam in the machine shed so he can go from one tractor to another without having to repeatedly transfer to and from his wheelchair. The trolley goes between five rafters up in the shed and he can lift up and push off from his skid loader and ride the trolley to the piece of machinery he'll use next.

"It obviously becomes very important that we first set up all the machinery just right," he joked. "But it's really not all that difficult if you have the foresight to plan your activities and simplify things. Common sense goes a long way. My machine shed is twice as big as I need for the amount of machinery I have, but it's got to be big enough that I can drive with my tractor to park everything. I just can't pull it all in and park it like an able-bodied person can."

Driving wherever he's needed to talk with newly disabled farmers, Mr. Theesfield had just returned from a hospital where he met with a fellow who became paraplegic in a recent farming accident.

"I talked with him about things that will happen to him in the hospital and once he gets back to the farm in a wheelchair. We talked about farming and why I went with the types of equipment I did, explaining different lifts and hookups for wagons," said Mr. Theesfield. "I tried to encourage him to continue to farm and to show him it was still possible to do — to give him a reason to get up in the morning. In fact, he's coming home in a week and I'll be loaning him an electric hospital bed. We already got him a ramp for easy access to his house and will line him up with a lift. He seems to be all excited about coming home, eager to get back into farming. In addition to the hospital visits, I'm going to start doing farm visits where I can actually demonstrate some of the modified equipment."

Of which there are many, for advances in agricultural and rehabilitation technologies allow the farmer with a disability to remain active in the farming operation. Farmers with a spinal cord injury often use a tractor or platform lift to get from their chair into the tractor seat, where they use modified hand controls to control two brakes, a clutch and additional tractor controls.

Automatic gate openers reduce the need to climb in and out of the tractor when opening gates as do spring loaded gates which bounce back up after being driven over in a tractor. Automatic hitching aids allow hitching and unhitching of wagons from the tractor seat and bin lid openers allow a farmer to open or close the bin lid from the ground.

Farmers with a back injury might use round hay balers or bale stackers to eliminate at least 50 percent of the physical handling and bending required. Milking parlors eliminate the need to bend as the milking equipment is attached to the cow while raised decks can be installed in farrowing houses to again minimize the

(See FARM, page 35)

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FARM . . .

(Continued from page 20)

amount of bending required. Adjustable steering columns, swivel seats, seats with independent suspension to absorb shock, lumbar supports and convex rear-view mirrors all can prevent further back injury, added Ms. Willkomm.

Common problems encountered by the amputee include frequent cable breakage, harness discomfort and limitations in the terminal device. Some farmers with below-elbow prostheses have replaced the cable with nylon rope while others have used heavier ⅛-inch cable. One farmer from Nebraska created a quick-release harness with help from a local saddle maker. Cold sensitivity and frostbite also affect the residual limb. Some warm up the prosthesis with a hair dryer before going out or wrap the residual limb in a heating pad, while others pull extra stump socks or tube socks over the limb and the prosthesis.

Maintenance of grasp is a problem, even if a farmer's hook is used. Wrapping non-slip material around the terminal device or object to be grasped helps. During hay season, a Wisconsin farmer uses a hay hook fabricated by a local machinist which he simply screws into the threaded shaft on his socket once his terminal device is unscrewed. Tools may be modified, while others are commercially available. Lever extensions, relocated controls, one-handed grease guns, saws, hand-operated air impact tools, magnetic nail holders, ratchet screwdrivers and wrench adapters are available to simplify one-handed tasks.

"The visually impaired farmer is assisted by auditory cues. He may mount wind chimes on different buildings, each chime having a different tone which provides an excellent orientation as he moves around the farm. He may also modify the gates using different materials—wood, wire, ceramic—so that if he loses his direction he can tell by the material which section of the farm he's near, especially in winter when snow covers gravel, sand and grass," Ms. Willkomm explained. "Raised markings on the scales and tools are also very useful."

Mobility on the farm can be improved by riding a lawn mower or using a golf cart. An all-terrain vehicle with a bed or trailer attached can be used to haul seed, for example, but very few farmers with mobility restrictions farm alone, or farmed alone prior to their disability, Ms. Willkomm said. Most are able to depend on family, hired men, co-workers, and neighbors.

"Working with the client and family on job restructuring is critical for a smooth transition to occur. Take the farmer who lost his eyesight. He might not be able to drive the tractor, so we look at how much time is actually spent on the tractor and how much time is spent caring for livestock, loading/unloading the tractor, maintaining the equipment, cleaning barns and doing the recordkeeping," Ms. Willkomm said. "In this case, his wife did the book work before and now he does most of it. His daughter used to collect the eggs and now he does that. Now helping him clean the barns and milk the cows, his son used to climb to the top of the silo. The farmer decided he could do that now, because it doesn't bother him to look down since he can't see anything anyway."

Guided by more stories and creative ideas, Ms. Willkomm continues to steer this farm program into new directions. The only program of its kind in the United States, other states are interested in starting one while the Breaking New Ground program will expand its service delivery.

"I hope rehabilitation professionals become more aware of how to use the services we provide in addition to becoming more involved themselves. Occupational and physical therapists are in short supply and high demand in the rural areas," Ms. Willkomm said. "It seems the biggest barrier for most newly disabled farmers is the immediate focus on their inabilities. We try early on to instill a positive self-image and sense of realistic hope by saying 'Look at what you can do with what you have left. It is possible to return to farming and here's how to get started.'"

For information contact: Bill Field, Professor of Agricultural Engineering and Project Director, Breaking New Ground, Department of Agricultural Engineering, Purdue University, West Lafayette, Ind. 47907; or Terri Willkomm, Director, FaRM, The Easter Seal Society of Iowa, P.O. Box 4187, Des Moines, Iowa 50333.

WEDNESDAY, MARCH 28, 1990.

PEANUT RESEARCH

WITNESSES

JIMMY BLITCH, GEORGIA AGRICULTURAL COMMODITY COMMISSION FOR PEANUTS

DON KOEHLER, GEORGIA AGRICULTURAL COMMODITY COMMISSION FOR PEANUTS

Mr. WHITTEN. We turn now to Jimmy Blitch.

Mr. KOEHLER. Thank you, Mr. Chairman. I am not Jimmy Blitch, but I am testifying in his stead today. I am Don Koehler, the Executive Director of the Georgia Peanut Commission. Mr. Blitch is the Chairman of our Research Committee.

We have potentially——

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks. I hope you will touch on the high points.

Mr. KOEHLER. Yes, sir, we will because I have a very wonderful staff that has written this wonderful statement, but if I give it as it is my tongue will be tied in knots because I am just a plain old country boy that is proud to be here.

What we have got in peanuts right now is a really critical situation that we have going on. We have been looking at our yields and the yield trends that we have. If we look at the first part of the decade we had pretty substantial increases in the yield trends. But as we look at the last half of the decade, what we have seen is a downtrend in peanut yields.

We have done a lot of soul searching and a lot of trying to figure out what the major cause for this type of a situation is. If we look at it, we are down about 14 percent if we look at a period of the last six years versus the period of 1979 through 1984. We took out the drought in 1980, because it would have made an even more drastic picture if we would have put the drought of 1980 in.

As we look at it, we have got a serious problem in peanuts in that we have got a very limited acreage in this country. We had, in the early 1970s, a type of peanut called the runner peanut, which is our predominant variety that is produced in the nation right now. We saw yields go up for a while, but now we have had a limited amount of influence and influx into the industry because we have got a small acreage and the incentive for the commercial companies to develop seed varieties really simply is not there because their financial incentive is not there.

If we look at the value of the crop it is very important to us in Georgia. We produce 46 percent of the nation's peanut crop right there in Georgia, and it is our largest single cash crop. We like to think of Georgia as the peanut State because it is the largest crop that we have and it is a very large and important thing to our economy.

For the growers, alone, we are looking at a $500 million income annually, and if we look at the impact on the State, it is $2 billion. But with this serious problem that we have in downtrend of yields right now and with the fact that the only varieties that we have—

and the last real genetic introduction to us that was a substantial introduction was the runner-type peanut back 20 years ago.

So if we look at the situation that we have got, we simply need some influx of some money into the ARS program so that we can get some research dollars into some peanut breeding programs and into some biotech things that we can do.

We, as growers, have started funding some things that are exciting to us. We have started funding the genetic map of peanuts. We have got a test now. We have proven the test. We have proven that the test will work, but our resources are very limited in that we have got a research budget of about $300,000 a year.

We are asking for an introduction of $1 million to help us go in here and put together the molecular technology and the biotechnology that we need in peanuts to address the issues of quality and of things like freeze damage and helping us do that, improved quality in our peanuts, and things like growth regulation built in. We lost a product that was a very good product for us to use as a growth regulator, but it simply can't be used.

Mr. WHITTEN. Thank you very much. We appreciate it. We appreciate peanuts in Georgia. We lived with it here for a long time. We realize how important it is. It will have our study.

Mr. KOEHLER. We certainly appreciate it.

Mrs. SMITH. We appreciate it. I agree about the importance of Georgia peanuts.

Mr. WHITTEN. I hate to announce this, but we have a vote over in the House.

[Recess.]

[The prepared statement follows:]

Statement
to the
Subcommittee on
Rural Development, Agriculture
and Related Agencies
Committee on Appropriations
U.S. House of Representatives

Submitted by
Don Koehler, Executive Director
Georgia Peanut Commission
on behalf of
Jimmy Blitch, Chairman
Georgia Peanut Commission Research Committee
March 28, 1990

SUMMARY

An increase of $1 million for appropriations in Agricultural Research Service (ARS) USDA funding for peanuts divided across the three ARS locations in Tifton, Georgia; Suffolk, Virginia; and Raleigh, North Carolina is requested. This is essential if peanuts are to remain a significant crop in the Southeast and coastal plain states. Increased ARS funding will permit rapid expansion of current federal/state research efforts into a wholely integrated, multi-disciplinary team focus on the major factors affecting market quality and cost efficiency of production.

Mr. Chairman, members of the Subcommittee on Rural Development, Agriculture and Related Agencies, I am Don Koehler, Executive Director of the Georgia Peanut Commission, and I am submitting this testimony on behalf of Jimmy Blitch, Chairman of the Georgia Peanut Commission Research Committee.

We have a potentially serious problem in Georgia and the United States. We know that new peanut varieties with high yield and desirable market quality are essential if Georgia and U.S. producers are to continue to be competitive in the domestic and expanding export markets. The yields of the runner type peanut, which is predominantly grown in Georgia and other varieties grown in Georgia and the U.S. have plateaued and began a down-turn over the last decade.

Comparing the 6-year period 1979-84, omitting the 1980 drought year as an aberration, to the five year period from 1985-89 you will see U.S. yields have decreased 6 percent. In Georgia this is even more dramatic. During this same period we see that Georgia's yields have decreased 14 percent during the last half of the decade averaged against the first half of the decade.

While the average U.S. yield between 1985-89 was essentially stagnant at 1.8 percent higher than the average U.S. 1973-77 yield, we note that Georgia's yield during this period decreased nearly 10 percent. It is disturbing for us to realize that we are 10 percent less in yield during the last 5 years than during the 5 year period after the florunner variety was widely introduced to the growers two decades ago.

Though high in crop value, peanut acreage in the U.S. is not sufficiently large to attract the attention of private seed companies. Development of new varieties and improved genetic lines emerge almost solely from the public sector. Agriculture Research Service (ARS) funding for peanut research at Tifton, Suffolk, and Raleigh has remained constant for almost two decades. These programs, like other ARS programs, suffer from increased costs in salaries, supplies, and equipment. Thus, it has not been possible to add the needed expertise at these locations and in most instances, it has been necessary to reduce the scientific staff.

Georgia alone accounts for nearly 50 percent of the peanut production in the United States with recent plannings averaging nearly 700,000 acres, primarily of the Runner type. Annual peanut production in Georgia, in gross value to the growers, is approximately $500 million. If you include the shelling, storage and blanching operations and conversion to peanut butter, snack and confectionery items, in addition to all the allied industry supporting both the farming operations and further processing operations, peanuts contribute to Georgia's domestic economy over $2 billion.

In addition to the loss of peanut yield and value, our problems are compounded by the loss of growth regulators and pesticide chemicals because of food safety issues, which has created an urgent need for varieties with greater disease and nematode resistance in altered plant growth habits. We also know

that lack of desired flavor development and a means to eliminate freeze damage kernels and seed coat discoloration are major quality factors threatening domestic and limiting export markets. We know that present and developing markets and expanding U.S. export markets in Europe, Canada, and Japan are all quality orientated. China, Argentina and Malawi stand ready to exploit U.S. development if supplier quality is limited.

We have the need for critical data inputs in order to develop expert management systems that minimize costs and optimize yield and quality in production, harvesting and storage. We have need of essential knowledge on current flavor characteristics, their development during maturation and rapid means to screen during variety development in order to produce new varieties that meet quality requirements for roast flavor as well as those for size and texture. Advanced technology for sorting and eliminating damaged/improperly handled in-shell and shelled peanuts are essential to meet quality and safety demands of the marketplace.

Tremendous tools have been developed with new developments in biotechnology and molecular technology available to the biological sciences. We do not even have the capability to implement this new technology for assaying and identifying important agronomic traits at the molecular level in order to develop new high yielding varieties. Without additional funding, this new technology cannot be used unless we transfer funding from existing disciplines that have already extremely limited

funds.

An increase of $1 million for appropriations in Agricultural Research Service (ARS) USDA funding for peanuts divided across the three ARS locations in Tifton, Suffolk, and Raleigh is requested. This is essential if peanuts are to remain a significant crop in the Southeast and coastal plain states. Increased ARS funding will permit rapid expansion of current federal/state research efforts into a wholely integrated, multi-disciplinary team focus on the major factors affecting market quality and cost efficiency of production.

Thank you for allowing me to present this statement. We stand ready to supply any documentation or information that you might need. If you have any questions, do not hesitate to call upon us.

WEDNESDAY, MARCH 28, 1990.

WATERSHED PROGRAMS

WITNESS

DAVID C. YAECK, INTERSTATE CONFERENCE ON WATER POLICY

Mr. WHITTEN. The subcommittee will come to order.

Mr. Yaeck?

Mr. YAECK. Thank you, Mr. Chairman.

I have been called an awful lot of things with a last name like that. I had a professor one time who insisted that it was "Yike."

I am Dave Yaeck. I am representing the Interstate Conference on Water Policy, sir.

Mr. WHITTEN. We are certainly glad to hear from you.

Mr. YAECK. I also am Executive Director of the Chester County Water Resources Authority in Pennsylvania. We have chatted before about the work we are doing on the Brandywine Watershed.

The ICWP commends this committee, of course, for its support over the years in the public law 566 program and its related public law 534 program. The reason for my appearance here today is our continuing concern over the slippage in the funding base for public law 566. We even have a dramatic impact again this year on the program, itself.

We feel quite strongly that, in looking at the total cut for watershed operations under the Soil Conservation Service budget of about $30 million, that it is a shortfall that really has a negative impact on the program. If we were to bring it up to a level that would allow us to carry on what is underway in the country right now under the 566 program and the related ones, we would be looking at $215 million, including the river basin surveys, etc., as opposed to the $168 million that is proposed by the Administration in its budget.

You may recall, sir, that this past year down in Congressman Watkins' territory in Oklahoma City we had a National Watershed Conference where we brought a number of organizations and interested people sponsors of public law 566 throughout the country together in Oklahoma City to review the program: where it was headed, the problems that had been associated in the funding levels that we have had over the years, and the number of projects that remain outstanding that are basically worthy projects that always have a disadvantage in not receiving the full funding levels that we would like to see.

We realize, of course, the reality of the budget situation here, the appropriations situation on the Hill.

But in bringing together that group we also realized that there may be a window of opportunity to revitalize the public law 566 program in light of changing circumstance—particularly in the areas of rural economic development, and the pronouncements that have been made by the Administration this year that we really should be taking a look to see whether or not we can bring it up into a more viable program with some additional attributes that will help in the funding process and help resolve some of the problems that we are having in rural development areas.

As a result of that, we have created out of all of this the National Watershed Coalition. We have now had two meetings—one last fall, another one in San Diego this past January—and we are meeting again in Washington next week.

I represent ICWP on the board of directors of that organization so that we can come and share through a common pool our working knowledge of the program and to bring some suggestions to the Soil Conservation Service and to the Congress with an idea of bringing it into a more effective relationship with the ongoing problems that we see in the 1990s.

We are again commending you for the support of this subcommittee, for the financial support that we have had of public law 566 over the years.

We do have a shortfall again this year. We ask you to address it, sir. You have always——

Mr. WHITTEN. I don't know what we can do. You probably don't know it, but I initiated the watershed program.

Mr. YAECK. I am well aware of that.

Mr. WHITTEN. That was in the 80th Congress at the National Convention. I went before the Convention and got them to adopt the plank. At that time the Republicans took over Congress and Carl Anderson went along with what I had proposed. That's the origin of it. I am very proud of it. In addition, we have restored funds for the soil conservation program, about 35 or 36 times.

The thing that bothers me, in addition to the quality of water, which is a very serious one, is that quantity is getting more scarce.

Mr. YAECK. This is one of our concerns.

Mr. WHITTEN. It is getting so low that it is hard to reach water in many areas. We are going to have to do something to keep the rainfall from running out to sea.

Mr. YAECK. Mr. Chairman, I express that in my more detailed testimony.

Mr. WHITTEN. We will be glad to have your statement appear in the record. Your complete statement will appear in the record immediately following your presentation.

Mr. YAECK. I appreciate that. We are looking at multi-purpose facilities to help in the rural development water supply areas.

I appreciate the opportunity to come visit with you.

Mr. WHITTEN. We are glad to have you.

Mr. YAECK. Thank you, sir.

[Mr. Yaeck's prepared statement follows:]

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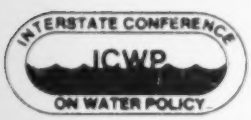

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Testimony of the
Interstate Conference on Water Policy

Before the
Subcommittee on Rural Development, Agriculture
and Related Agencies
House Appropriations Committee

Hearings on
FY 1991 Subcommittee on Rural Development,
Agriculture and Related Agencies
Appropriations

Presented by
David C. Yaeck
Member, Interstate Conference on Water Policy Legislative Committee
and
Executive Director
Chester County Water Resources Authority

The Interstate Conference on Water Policy (ICWP) is the independent national association of state, interstate and regional water administrators concerned with water quantity and quality management, conservation and development. Since 1959, ICWP has been the voice for state water resource management concerns, particularly with regard to the relationship between state and federal programs, regulatory authority and information exchange.

ICWP has long been committed to a cooperative partnership between federal and non-federal interests in solving the nation's water resources problems. The partnership involved in the Small Watershed Protection and Flood Prevention Program under PL-566 and PL-534 is an outstanding example of that valued effort. The program requires a non-federal commitment from state and local project sponsors and a similar federal commitment through the U.S. Department of Agriculture and the Soil Conservation Service.

At the end of 1989, there were 379 projects under construction through PL-566 with an additional 203 in the pre-construction phase. During 1990, 20 new construction starts are anticipated under current funding.

Under PL-534, it is estimated that 19 projects will be in pre-construction and 91 actually under construction this year.

But the outlook for both programs is harshly impacted by the Administration's FY 1991 budget proposal. A total reduction in Watershed and Flood Prevention Operations of $30 million has been proposed for FY 1991, with the PL-566 program reduced by 11 percent or $15,123,000. The PL-534 program is targeted for a 22 percent cut or $5,889,000.

The proposed reduction of $2,112,000 in River Basin Surveys and Investigations would cut the cooperative study effort, flood plain management studies, interagency coordination and program formulation by 15 percent and Watershed Planning, faced with a proposed cut of $2,062,000, would see those activities continued at about 78 percent of the 1990 level of activity.

The Interstate Conference on Water Policy commends this subcommittee for its efforts to keep these vital water resources programs viable throughout the years. Last year that support resulted in some $180 million being made available for Watershed and Flood Prevention Operations. However, to maintain the same level of activity for FY 1991, $192 million will be required for the coming fiscal year.

Additionally, the River Basin category would need funding at $13 million and Watershed Planning would require an expenditure of $10 million for a total expenditure for Watershed and Flood Prevention Operations of $215 million as opposed to the $168 million proposed by the Administration.

Optimum funding to accommodate all proposals in various stages of development in the pipeline would approach a required funding level of $321 million for FY 1991 which we recognize is not feasible due to budget constraints.

However, it is the view of ICWP that the maintenance of a healthy and viable partnership under the Watershed Protection and Flood Prevention Program requires that our federal partners have the financial means to fulfill the responsibilities defined in the various cooperative agreements. The FY 1991 Administration budget proposal falls short of that goal.

The Interstate Conference on Water Policy has been consistent over the years in expressing its concern over the historic decline in funding levels for USDA water resources activities. The ICWP Statement of Policy reflects the value of these activities by stating, "ICWP believes the development and management of the water resources in small watersheds is vital to the economic well-being of the Nation for flood control, water supply and irrigational purposes. The installation of land treatment measures is similarly vital to the quality of the Nation's waterways as a means of controlling soil erosion and sedimentation."

This Statement of Policy takes on an even stronger significance in view of the Administration's pronouncement earlier this year of new initiatives regarding rural economic development.

ICWP believes the revitalization of the PL-566 program for the reduction of flood losses, soil erosion and sedimentation control and creation of new water supply sources will enhance the rural development effort by assisting diversification and providing needed community services to rural areas and small towns.

ICWP has joined with other state and national organizations in the National Watershed Coalition which has as its focus improved viability of the PL-566 program coupled with adequate federal funding for project implementation.

We believe the Nation has much to gain from the efforts of such a Coalition in renewing the vitality of the PL-566 program in cooperation with the Congress and the U.S. Department of Agriculture. We respectfully request that the subcommittee consider this new effort and provide funding levels for the Small Watershed Protection and Flood Prevention Program which will permit this initiative to move effectively forward.

ICWP wishes to again commend the members of this subcommittee for its continuing support of this valued program.

WEDNESDAY, MARCH 28, 1990.

NATIONAL INITIATIVE ON RESEARCH

WITNESS

JACK EARLY, NATIONAL AGRICULTURAL CHEMICAL ASSOCIATION

Mr. WHITTEN. Mr. Early is next.

Jack, we appreciate your staying with us. We are glad to welcome you.

Mr. EARLY. I have enjoyed the comments and the philosophy of the Chair this afternoon, Mr. Chairman.

Mr. WHITTEN. I won't ask you what you thought about procedure here, but I will say this: you have done a great service for many, many years for American agriculture in our country. It has been a pleasure to work with you. You certainly have been an advocate for research throughout the years and throughout your service. I don't know what we are going to do when you retire.

Mr. EARLY. I'm going to play a little golf. I don't know what you are going to do, Mr. Chairman.

Mr. WHITTEN. We are, indeed, glad to have you.

Mr. EARLY. Thank you, Mr. Chairman.

For the record, my name is Jack Early. I am the President ex officio of the National Agricultural Chemical Association.

I am here this afternoon, Mr. Chairman, on behalf of Mr. John Hagaman, who is the President and Chief Executive Officer of Dowelanco Company.

You have his statement before you. He apologizes that he was unable to be here because of some pressing travel schedule.

What I would like to do this afternoon, Mr. Chairman, is just to highlight or read a few of the issues that he would like to call to your attention out of his testimony, and then, in the press of time, move on with it.

I am sure you are aware that his testimony deals primarily with the national initiative on research that you have heard a lot about today and that you and I have discussed privately earlier today.

He is also a member of the Executive Committee of the Coalition for the Advancement of Research on Agriculture, Food and Environment, and has a lot of interest in this area. That is why he was willing to submit a statement before this committee to urge the committee to look seriously at this proposal.

Mr. Chairman, U.S. agriculture needs some very substantial new resources for programs and research and development in publicly-supported institutions. Firsf we need to increase the total funding for research on agriculture, food, and environment. Secondly, we need to bring better balance into the total program by increasing funding for research that is awarded on the basis of relevance and merit.

We urge that funding for existing programs be continued and perhaps even expanded in selected areas. The national initiative should not come at the expense of any existing programs at all which this committee has supported so well in the past, but it should be an infusion of new funding to meet some of the pressing problems in some of the new areas for U.S. agriculture.

Funds for publicly-supported agricultural research in this country essentially has stagnated at a constant-dollar level that has not grown significantly in the last 20 years—you and I know that, Mr. Chairman.

While the industry for agriculture, food, and environment has substantially increased research funding in recent years, our investment must necessarily be specifically applying knowledge developed through basic research to develop products that will perform well on the marketplace. Industry simply cannot afford to do a major part of the earlier research that is relatively high-risk and which also brings the conceptual breakthroughs that are so badly needed in our society today.

The national initiative involves both fundamental and mission-linked research, Mr. Chairman, the latter involving the participation of Extension specialists to assure ready technology transfer, which is so important. Even at the start-up phase the Administration proposes that part of these funds be awarded as strengthening grants to small and less-competitive universities for enhancing their ability for graduate stipends.

In the view of the industry, Mr. Chairman, one of the major advantages of the national initiative is the affect it will have on attracting and supporting top students in the life sciences that impact agriculture, food, and environmental research. This, in turn, will provide graduates that are so urgently needed in the ranks of industry to carry out our part of the total research and development cycle.

Mr. Chairman, we are aware of the reservations that you and some others have regarding the funding and the methods of the national initiative. We believe that the program proposed by USDA will alleviate some of the concerns—especially with the guidance that may be provided by Congress in targeting the programs and areas proposed by the National Academy. We do not advocate this initiative in lieu of any other, but in addition to the programs initiated by Congress doing different methods of funding.

We urge that the Congress find new funds to increase funding and not trade one program for another, Mr. Chairman.

Thank you for the opportunity to make these comments today.

Mr. WHITTEN. We are, indeed, glad to have you. I want to say for the record that I don't know of anybody that has contributed more not only to the welfare of American agriculture but, through that, to the country. Our ability to provide food has been the biggest advantage we have had. Unfortunately—not because of me and you—in recent years they haven't been doing what I thought was proper in that we have never cashed in on that ability. We pay our people not to produce at a time when the rest of the world is in need. It is the biggest card we have had to play. We haven't played it. I am hopeful that we will be able to do it.

But I want to commend you for the record on the great job you have done through the years. I hope that when you do get around to retire you won't quit us up here.

Mr. EARLY. Thank you, Mr. Chairman.

Mr. WHITTEN. We appreciate you. Again, I apologize for the delay.

Mr. EARLY. No problem.

Mr. WHITTEN. We have to recognize our colleagues. As I said, you had to have a wheel horse in the country where I was raised, so you are the wheel horse for the hearing today.

Thank you very much.

Mr. EARLY. I appreciate your comments, Mr. Chairman. Thank you very much.

[Mr. Hagaman's prepared statement follows:]

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TESTIMONY OF

MR. JOHN L. HAGAMAN

PRESIDENT AND CHIEF EXECUTIVE OFFICER
DOWELANCO

BEFORE

THE SUBCOMMITTEE ON RURAL DEVELOPMENT
AGRICULTURE AND RELATED AGENCIES

OF

THE APPROPRIATIONS COMMITTEE
U.S. HOUSE OF REPRESENTATIVES

ON BEHALF OF

THE COALITION FOR ADVANCEMENT OF RESEARCH
ON AGRICULTURE, FOOD AND ENVIRONMENT

MARCH 28, 1990

Mr. Chairman, my name is John L. Hagaman and I am President and Chief Executive Officer of DowElanco, located in Indianapolis, Indiana. Our company is a diversified supplier of agricultural products used broadly in agriculture across the United States. I am here today to speak on behalf of the National Initiative for Research on Agriculture, Food and Environment. I am a member of the Executive Committee of the Coalition for Advancement of Research on Agriculture, Food and Environment (CARAFE), which is a network of advocates supporting the National Initiative.

CARAFE has more than 175 members comprised of national farm, commodity and agribusiness organizations, professional and scientific societies and both land grant and non-land grant universities and environmental and consumer groups. There has not previously been such a broad consensus on any matter dealing with funding of agricultural research to the best of my knowledge.

Mr. Chairman, in simplest terms, U.S. agriculture needs very substantial new resources for its programs of research and development in publically supported institutions: (1) we need to increase the total funding for research on agriculture, food and the environment and (2) we need to bring better balance to the total program by increasing funding for research that is awarded on the basis of relevance and merit, with projects selected through competition and awarded to the institutions best able to perform in the areas selected for funding by the Congress.

In seeking new funding for the national initiative, we urge that funding for existing programs be continued and perhaps even expanded in selected areas. The national initiative should not come at the expense of existing programs, which this Committee has supported so well in the past, but should be an infusion of new funding to meet pressing problems and to use major new advantages in science to solve some of the most pressing problems ever faced in U.S. agriculture.

Those of us from industry place very high priority on reducing the government's budget deficit. I recognize that the so-called "peace dividend" will not solve the deficit problem nor provide major new funds, at least in the short-run, for other purposes. In spite of this, I recommend that the Congress recognize the combination of need and opportunity that exists today in agriculture and provide new funding for research and development in the face of the general squeeze on federal spending.

I make this recommendation because I am convinced that new research will earn for rather than cost money to the taxpayers of this country. I know that you are aware of the history of pay-off of this kind of research; there is a demonstrated rate of return to the taxpayer of between 30 and 100% per year for investments made in agricultural research.

My organization is actively involved in industrial research and in partnering with universities around the country. We are deeply involved in assessing problems facing agriculture today and in evaluating the potential for solving these problems through science and technology. The picture that emerges from this assessment of where we are relative to our competition in other countries is far from positive.

We see major public investments being made off-shore in agricultural research and development that will sharply enhance the advantage of our competition. We see competititors with advantage resulting from ability to use as yet untapped natural resources. **We find funds for publically supported agricultural research in this country essentially stagnated at constant dollar levels that have not grown significantly in the last twenty years.**

While industry related to agriculture, food and the environment has substantially increased research funding in recent years, our investment must necessarily be in specifically applying knowledge developed through basic research to develop products that will perform well in the market place. Industry simply cannot afford to do a major part of the earlier research that is relatively high-risk, but which will also brings the conceptual breakthroughs that are so badly needed today. Industries other than agriculture count on federal support of the basic research they need to maintain competitiveness. In my view, the federal government must to the same for our industry.

If the U.S. is to maintain competitiveness in the international marketplace, we must recognize that our competition can and will generate new technology in research programs that are as good or better than ours. We no longer have the market cornered on new technology as we did in previous decades. Old technology must be replaced with new capabilities. As is the case with other industries in this country, agriculture is on a technology treadmill. We must be aggressive if we are to maintain or enhance our position in the marketplace.

The administration has proposed an FY 1991 budget which seeks increases in funding across the Science and Education elements in USDA. The center piece of this proposal is the National Initiative; the Administration proposes about $50 million of new funds for the initiative, the remainder of the $100 million representing continuation of current programs. The USDA has published a program plan for the National Initiative based on recommendations of the National Academy of Sciences. The National Academy calls for eventual funding at the level of $500 million pe year. OMB has committed to out-year increases up to a total of $300 million for the National Initiative.

The National Initiative involves both fundamental and mission linked research, the latter involving participation by Extension specialists to assure ready technology transfer. Even at the start-up phase, the Administration proposes that part of these funds be awarded as strengthening grants to smaller or less competitive universities, for enhancing their ability and for graduate stipends.

From the view point of industry, one of the major advantages of the National Initiative is the effect it will have in attracting and supporting top students in the life sciences that impact agriculture, food and environmental research. This in turn will provide graduates that are so urgently needed in the ranks of industry to carry out our part of the total research and development cycle.

The National Academy proposed six areas in the initiative. The Administration proposes to fund four of these six in FY 1991, deferring the other two until future years when increased funding is available. CARAFE believes that all six of these areas must be funded in FY 1991. The two that are left out in the Administration's budget are (1) markets, trade and policy and (2) development of new products, processes and research to add value to raw products. Industry across the board views both of these areas as being of very high priority. Furthermore, the President's budget calls for $5 million in research on diet-health and food safety issues; we believe this is totally inadequate to address consumer and producer concerns about this issue. Similarly, we think that the funding proposed for the area of natural resources and environment should be double the President's budget recommendation to allow us to move ahead on developing solutions to some very pressing problems in this area. Thus, CARAFE proposes that the budget for FY 1991 for the National Initiative be $150 million, providing $100 million of real new funds.

Mr. Chairman, I am aware of the reservations that you have expressed about the method of funding of the National Initiative. I believe that the Program Plan proposed by the USDA will alleviate these concerns, especially with guidance that can be provided by the Congress for targeting the programs in the areas proposed by the National Academy. I do not advocate this initiative in lieu of, but in addition to the other programs initiated by the Congress using different methods of funding. I urge that the Congress find new funds to increase funding, not to trade one program for another. Unless we do this, we shall take away from programs with a demonstrated track record. Unless we move into the areas of science called for in the National Initiative, allowing the best qualified institutions to take up the agenda prescribed by the Congress, we shall miss an opportunity of profound importance to the health of agriculture and related natural resources in the United States.

In summary, Mr. Chairman, I commend the President for bringing this initiative to the Congress with his recommendation for new funding and his commitment to out-year growth. CARAFE and its members urge the Congress to go even further, providing funding at the level of $150 million. Our Coalition also wishes to express appreciation to you and your Committee for the support and wisdom that you have provided for agricultural research. It is our hope that real growth and improved balance can be provided in the FY 1991 budget for Science and Education in USDA, so that we can address the key issues facing the largest industry in this country.

Thank you for the opportunity to make these comments.

WEDNESDAY, MARCH 28, 1990.

WIND AND SOLAR TECHNOLOGY

WITNESS

SCOTT SKLAR, U.S. EXPORT COUNCIL FOR RENEWABLE ENERGY

Mr. WHITTEN. Mr. Sklar?

Mr. SKLAR. Thank you, Mr. Chairman.

I represent nine trade associations in renewable energy technology, and these nine trade associations sell about $1 billion worth of product now, mostly from small business, mostly overseas, mostly in the rural area.

We are coming to the committee with a very simple request: a $350,000 cost share with industry. The $350,000 cost share with industry would allow us to set up a center at an existing agricultural university, to bring in people from overseas to be trained on wind technology and solar pumping technology and purification, desalinization, and purification technology.

AID has agreed, if we set up the center, that they will pay for overseas agricultural experts to be trained on U.S. equipment. The Department of Energy said they will contribute to the center free design experts from Sandia National Labs.

The wind technology is not the old technology. These are now 16,000 megawatts in the United States.

The photovoltaic technology is very advanced now—$200 million a year, mostly for water pumping and irrigation. This is one in Pennsylvania.

These solar steam plants—we have 300 megawatts all privately financed now. It was on channel 7 news last night. They are also creating steam and desalinating water and purifying water in the agricultural sector.

USAID published this book on renewable energy and agriculture and health. We are a way to lower the cost to farmers. Our industry is small business. We are willing to make a 50/50 cost share contribution.

I know money is tight, but I am hoping that you may help us find a way to cost share on $350,000 to set up this training experiment that we think will get you a lot further using the private sector helping farmers lower cost and helping us build an export market with the agricultural sector, and for domestic uses, as well.

Those are my comments.

My final statement is that EPA and others are going to start regulating diesel turbines in the agricultural sector for pollution and air quality issues. We are absolutely cost competitive against diesel right now in all aspects. This may be a way, when the going gets tough, to be bringing in some new technology that could resolve some problems.

Thank you for your time.

Mr. WHITTEN. You are talking about desalinization. What luck are you having in taking salt out of water?

Mr. SKLAR. Very good. Right now there are several——

Mr. WHITTEN. Somehow it has just been terribly expensive.

Mr. SKLAR. It still is expensive, but we are finding is that we are getting new materials to lower the cost of the solar systems from—you know, there were the old stainless steel and glass days; now we have stretched membranes that are used as reflectors. That came out of the space program. We have several commercial salt plants in the Caribbean basin now, mostly in tourist areas. And we are looking at the North African market.

Mr. WHITTEN. What about the water table? On this committee we hear that the water table is dropping throughout most of the United States.

Mr. SKLAR. It is an immense problem. In fact, the quality of the water from the water tables is becoming problematic, too. This may help that.

Mr. WHITTEN. The media and the press keep us aware of quality, but they don't talk as much about quantity, which is getting equally as serious.

Mr. SKLAR. Very essential.

We think we are part of the solution. We are not the whole solution. We think it is a tiny way to help bring our industries in sync, and we both have a lot to win if we do it.

Mr. WHITTEN. Thank you very much. We are glad to have your statement.

Mr. SKLAR. Thank you, sir. I appreciate it.

[Mr. Sklar's prepared statement follows:]

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American Wind Energy Association

Cogeneration & Independent Power Coalition of America

National Geothermal Association

National Hydropower Association

National Rural Energy Association

Pacific Rim Resources Council

Renewable Fuels Association

Solar Energy Industries Association

Volunteers in Technical Assistance

Wind Industry Alliance

TESTIMONY

by

SCOTT SKLAR
EXECUTIVE DIRECTOR
U.S. EXPORT COUNCIL FOR RENEWABLE ENERGY

before

HOUSE APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE,
AND RELATED AGENCIES

MARCH 27, 1996
WASHINGTON, D.C.

INTRODUCTION

The U.S. Export Council for Renewable Energy (US/ECRE), formed by the nine national renewable energy trade associations to promote exports of alcohol fuels, geothermal, hydropower, passive solar, photovoltaics, solar thermal, wind and wood energy technologies and services. Our associations of manufacturers, service providers and component suppliers, urges the Subcommittee on Agriculture, Rural Development and Related Agencies to:

- Create a Center for Advanced Water Technology using existing Agriculture Research Facility(s) as a technical training center for foreign agricultural experts and government personnel, and

- Provide support of $350,000 as an add-on to current USDA technical activities to assist the renewable energy industries to develop a Center for Excellence on photovoltaic, solar thermal and wind water pumping & irrigation, and purification technologies (made in the United States) to insure our dominance of the international markets vis-a-vis our international competitors.

The reason for these requests are quite simple. Our international competitors have successfully used such government-supported training centers as a way to build their overseas markets. Our industries need like support at a time when the solar and wind energy industries are locked in an intense battle for the world markets. The 1990 year represents a critical time for the U.S. renewable energy industries and we cannot afford to lose world markets which are the very life blood of our survival. The U.S. Department of Agriculture's support will be very important to increase our world market share, and that support is essential for our industries to grow.

Our international competitors have successfully directed their development and export assistance programs to increase the use of renewable energy resources while building their renewable energy industries, in some cases to surpass the United States. The U.S. Agency for International Development has recently published, "Renewable Energy Agriculture & Health" which clearly describes a series of cost-effective renewable energy applications -- most of which can easily compete today against remote diesel generation, water pumping and irrigation.. The export programs of the United States of America must expand these renewable energy applications many fold to promote real economic growth and curtail profound environmental degradation.

OBJECTIVES

The Center for Advanced Water Technology (CAWT) will be a development training center in the field of rural water supply. The Center will serve as an applied technology training center at an existing Agricultural Research Center to train overseas agricultural government planners, technicians, and farmers to become familiar with U.S. solar and wind technologies.

The basic objectives of The Center is to:

1. Enhance U.S. industry competitiveness in international water supply markets.

2. Increase exports of U.S. advanced water pumping/lifting and purification/desalinization solar and wind technologies.

3. Facilitate industry/government cooperation in the area of overseas water resource development.

4. Provide technology to address a major development and health impediment in the Third World.

PROPOSAL

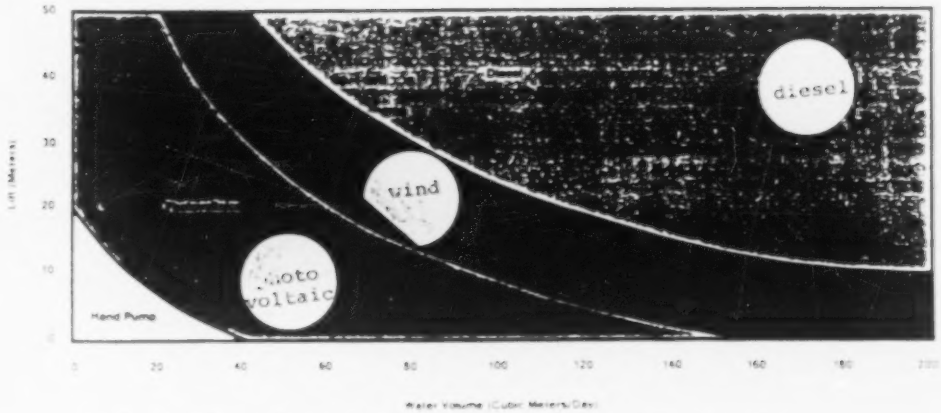
An affordable and secure supply of safe drinking water is a key element necessary for sustainable rural development. Agricultural productivity, including the ability to feed the local population as well slow rural-to-urban migration, is also governed by the availability of water.

According to World Bank figures, over two billion people will not have access to safe drinking water by 1990, the end of the current World Bank/United Nations International Drinking Water Supply and Sanitation Decade. The annual amoritization costs of providing new water supplies to these rural populations will range from $4-$24 billion, depending on the level of service provided. In most cases, the main cost elements in providing new water supplies will be the drilled wells and the equipment for pumping water. The need for water conditioning equipment to desalinate or purify water significantly adds to these costs.

Since the utility grid seldom extends into rural areas in need of water resource development, the use of solar and wind energy technologies are necessary. The dominant pumping technologies in developing country rural areas are presently hand-pumps and diesel-powered pumps. Diesel generators supply power to most remote desalinators and water purifiers. European manufacturers currently hold dominant market shares in the worldwide supply of both hand-pumps and small diesels. Hand-pumps, in which people provide the power, are used when water demand is low and the well depth is under 100 feet. Diesel pumps are used for higher water volume needs or when water wells are deeper.

But the economics of diesel pumps, even at today's low fuel prices, are poor at low-to-moderate pumping volumes. This creates a sizable market niche where wind and photovoltaic powered water pumping systems are very competitive as can seen in the following graph taken from a recent USAID publication.

Range of Competitive Use of Photovoltaic and Wind Water Pumping



What stands in the way of an expanding U.S. market, is the difficulty endusers and financiers that are unfamiliar with new technologies. Being able to show a cost or performance advantage is not good enough. Developing country planners, multilateral banks and bilateral development agencies are very familiar with hand-pumps and diesels, but woefully ignorant of the advantages and limitations of wind and solar equipment. Our international competitors promoting wind and solar have developed training centers as we propose in their countries where they train potential users, funders or implementors. A major effort in the areas of education and promotion by the United States will be necessary to turn the promise of advanced pumping technologies into real sales and widespread use. This effort is beyond the capabilities of the renewable energy industries.

The opportunity in advanced water pumping and purification systems is not lost on European governments which have taken a very active role in facilitating and promoting exports. The European Community has financed $30 million for Sahelan African countries to purchase European photovoltaic and wind pumps. They realize that by providing "seed" money for training and technical support as the wind training center in Denmark provides, and innovative market promotion as does England, France and the Netherlands, will dramatically build their world market share.

While U.S. manufacturers have superior wind and photovoltaic pumping and solar thermal purification technology, we may ultimately lose out to European companies on the basis of governmental support. Drawing from the European model, the U.S. Export Council for Renewable Energy (US/ECRE) and the member groups: the American Wind Energy Association (AWEA) and the Solar Energy Industries Association (SEIA), are proposing the establishment of a very modest institution dedicated to promoting U.S. interests in the field of rural water supply. The proposed Center for Advanced Water Technology (CAWT) will have both advanced and conventional water pumping equipment operating onsite for training purposes and comparative studies. Wind and solar powered water purifiers and desalinization equipment will also be demonstrated for training purposes.

CAWT will offer regular training programs in the areas of resource assessment, specific technologies, least cost and project planning, and installation and service support. Technical and support materials and case studies will promote the advantages of advanced pumping and purification systems will give visibility to U.S. equipment and services. CAWT is also expected to provide significant benefits for domestic agriculture and land management. In the United States where there is a growing need for irrigation and farming practises that are more energy and water efficient. For instance, in the Southern Great Plains alone there are some 510,000 low volume irrigators relying on electricity and natural gas. As the costs for electric power and natural gas increase, the economic viability of these farms will be severely effected, for example, as some farmers in the Oklahoma and Texas Panhandles have experienced a tripling of their rates.

The CAWT program will be developed through assistance by the U.S. Department of Agriculture and the other federal agencies participating in the federally-mandated Committee on Renewable Energy Commerce and Trade (CORECT) and the associations of the U.S. renewable energy industries. While the FY'91 start-up costs will be $350,000, the U.S. solar and wind industries will provide cost-sharing to begin training USAID and USDA technical personnel, foreign nationals, and students. Industry workshops will be necessary to integrate industry activities with this proposed training instititions.

The location of the institution must be at an existing Agricultural Research Center with good-to-moderate wind and solar resource, with close ties to a University with a strong applied research program, and with facilities suitable for installing and training on advanced water pumping and purification systems. The Center will receive technical support from the U.S. Agency for International Development (USAID) and the U.S. Department of Energy through the Renewable Energy Design Assistance Center at the Sandia National Laboratories.

CONCLUSION

If the United States is to retain its technical predominance in new high-technologies, we must be willing to adapt to new strategies to commercialize our newest and best products and services. As the solar and wind industries have learned from our international competitors, customers buy products and services on which they were trained and educated about. While the solar and wind industries export over sixty percent of our technologies to the developing world, we are losing our world market share to more sophisticated overseas government promotion efforts on behalf of their solar and wind industries.

The rural sector in The Third World is a great market opportunity with multibillion dollar potential. The U.S. Department of Agriculture can play a significant role in opening up these markets through the utilization of an existing Agricultural Research Center to become headquarters for The Center for Advanced Water Technologies (CAWT).

The United States no longer has the luxury to sit back and allow market opportunities to be lost. Our industries' modest request for $350,000 in FY'91 is reasonable, fits the mission of USDA, builds the U.S. solar and wind industry markets, improves the quality of life in the Third World, and adds to the United States competitive advantage yielding jobs and economic growth.

The Center for Advanced Water Technology (CAWT) deserves the support of the Subcommittee on Agriculture, Rural Development and Related Agencies. We urge you to seriously consider this innovative proposal and we will provide the Subcommittee with additional information upon request.

Thank you.

THURSDAY, MARCH 29, 1990.

FOOD SAFETY—RESEARCH—WATER QUALITY

WITNESS

HON. GEORGE E. BROWN, JR., A U.S. REPRESENTATIVE FROM THE STATE OF CALIFORNIA

Mr. WHITTEN. The committee will come to order.

We have our friend Congressman George Brown here. He is a long-time supporter of agriculture as a nationwide business. He has presided, I believe, on the Agricultural Appropriation bill for a number of years—I won't say how many times. We are glad to have you, George.

Mr. BROWN. Thank you very much, Mr. Chairman. I am very happy and pleased to be here for this distinguished subcommittee.

I have a written statement which I will ask to be inserted in the record and I will just highlight some aspects of it.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

Mr. BROWN. As you indicate, I have appeared several times before this committee, largely because of my responsibility as chairman of the Subcommittee on Department Operations, Research, and Foreign Agriculture on the Agriculture Committee.

I should mention that we began this morning the markup of the research, extension, and teaching provisions of the Farm Bill and hope to complete that in the near future, as we hope to complete the entire redraft of the Farm Bill and have it ready for floor action some time in May.

Today I would like to offer some general views on the programs of interest to me and my constituents. I would then mention one specific item of particular concern to me.

I want to note that the President's proposed budget for fiscal year 1991 contains three major thrusts which I find very encouraging: food safety initiatives, a new research initiative, and a water quality initiative.

The Administration proposes a $71 million increase in efforts at the Department of Agriculture in the area of food safety. I applaud this increased emphasis—especially in the area of dealing with pesticide residues on food. We are working concurrently on revisions of the FIFRA legislation, which would reflect the President's concern with food safety, and we expect to emerge with a strong food safety package by the end of this Congress which, of course, is a very high priority in the public mind and, of course, is a high priority with those of us on the Agriculture Committee, as I am sure it is with you.

The Administration is also proposing a major new research initiative in competitive grants, proposing to raise that program to $100 million, which is more than double the current funding levels.

I want the chairman to know that I am fully supportive of this initiative and I urge him to seriously consider this request, although I recognize that in the past there have been some problems with this particular program.

I think that, carefully carried out, it can add a great deal of additional value to our agriculture research programs in this country. I would hope that the subcommittee would give it very careful attention.

The Administration is also proposing an additional $52 million for their water quality efforts. I am again in agreement with the Department on the need to expand their water quality program. We have heard increasingly over the past several years of the potential damage to our underground water supply that is occurring, and we feel that we need to address these problems. We are addressing them and have been this morning in our own committee. We are proposing to set up a restructuring of the Department's efforts in this regard, which we think the Department will be agreeable to, which would help to make sure that this additional funding is properly and prudently spent in the interest of agriculture and, of course, in the interest of those who have to use the underground water supplies of this country.

Now, this leads me into the special pleading which I am making to the subcommittee. The area of water quality is very important to all of us. In the West we have different kinds of water quality problems—especially in the area of water salinity and its affect on the land. In California, alone, it is estimated that about $600 million in agricultural production is lost each year because of salinity problems.

Of course, I am sure all of you know—I am well aware that you know—that the only research laboratory dealing with this problem completely is the Salinity Laboratory located in my district in Riverside, California.

This subcommittee has been very generous to date in recommending funding for the planning and design work of a new and upgraded facility—a relocated facility. The final engineering plans are about completed. You have helped with the first portion of the construction funding, and I can't tell you how grateful I am to you for that.

But we feel—the entire community feels—that the construction funding should be approved this year so that we can start work on the facility and begin to enhance our research efforts in this vital area of water quality. I emphasize that this laboratory serves the entire nation and, more particularly, the southwestern part which is so heavily dependent upon irrigated agriculture.

I know that you don't have the same problems, Mr. Chairman, in Mississippi, which makes me doubly grateful for your own concern that you have demonstrated in the past for helping those of us in the West who have these problems.

The existing facility was originally constructed back in the 1930s. It is an aging facility, obviously. It has been trapped and surrounded by the urban growth in the area. The University of California at

Riverside, seeing the situation and recognizing the importance of the research capability there, has offered land to the laboratory on their campus, which has a very large amount of available land. The plans have been designed for a new facility located on the campus.

The campus has, in addition, agreed to provide a number of supporting services and other functions which will reduce the operating costs of the facility after it is in operation.

So, if I may just summarize, I would say again, Mr. Chairman, that the three major initiatives that the President has offered we think are all very good. The food safety and expanded competitive research program and the water quality program indicate that the Department is moving to respond to the challenges which face agriculture today.

I do not agree with all of their approaches, but we are seeking to work closely with them in shaping the direction in which they are going. I hope to work with members of this subcommittee as we try to increase agricultural marketing opportunities through the commercialization of new crops and new products from existing crops. I know that Mrs. Smith is very much interested in this, as are several other Members of the Congress. We expect to have some substantial efforts underway in the Farm Bill in that area.

Let me thank you again for your interest and consideration of this matter.

Mr. WHITTEN. Thank you very much. As I mentioned earlier, for many years you have presided over that bill on the floor, and it has been to our advantage to have you there.

We have a number of problems here in connection with this. We get a whole lot of recommendations, but no money to pay for them. This year we have a request to cut existing appropriations by $1,400,000,000. Increases which you mention are at the expense of other activities of the Department. We have a budget ceiling, and then the Gramm-Rudman—so we have all sorts of problems here.

I think that overall the Office of Management and Budget doesn't realize that agriculture is our biggest industry, biggest employer, the cheapest and most economical supply of our food, and the biggest dollar earner in world trade.

The CCC has gotten to where it doesn't do anything except pay out to exporters, so we really have a problem here.

The next thing we have—and I know nobody could be more interested in agriculture than my friend from California and the California delegation—but one of the problems is that this Delaney Amendment, which prohibits the use of any addition if it requires a tolerance of zero. When that was adopted years ago you could measure one part per million. Now it is one part per trillion, and there is no such thing as zero.

We had witnesses before this committee and we sent them back to make some tests and see if there is any reason. As long as the law requires zero and there is no absolute zero, everything we have is operating by sufferance.

We had one Cabinet member—and one of the better ones—who stopped the use of red dye. When he stopped it, I had no objection to it. But he said that under the law he was obligated to. Well, if

they carried out the law they would stop everything under present conditions.

And the other thing, which you are familiar with, is that section 32 of the AAA Act provides that 30 percent of our import duties are set aside to help with exports of perishable commodities. They are using that for consumer programs.

So we have got our problems, but we appreciate your help through the years and your interest. I hope we can work the thing out.

Mr. BROWN. My admiration for the chairman's effort to grapple with these problems in the past is unbounded. I think you have done a remarkable job, and I commend you for it.

I am sure you are well aware that the recommendations of practically all objective outsiders are that we have not adequately recognized the importance of agriculture.

Mr. WHITTEN. As a nation.

Mr. BROWN. Yes, as a nation.

Mr. WHITTEN. I think you have, and I think I have, and some other Members of Congress. But we have got a whole lot of Members that don't have any knowledge in the field of agriculture.

Mr. BROWN. It is not only essential to our economic posture; it is also—the proper conduct of agriculture is probably the greatest benefit to the environment of any major activity in this country.

On the issue that you raised about the Delaney Clause, I want to assure you that I will be supporting and probably offering some changes in that in accordance with the President's food safety program. It is clear to scientific observers that if we were to substitute a more scientific standard than zero tolerance that it would enable us to use a broader range of chemicals that would be less hazardous to public health than the situation that we have at the present time. I intend to push very, very strongly to reach that goal.

Mr. WHITTEN. I have a couple of questions. I am glad to have an opportunity to discuss them with you.

I took the view that if we came out with a whole lot of money in this area without any evidence that there isn't a danger at all, the country would say there was something wrong or we wouldn't give them that much money. So we asked them to go back and make some tests and tell us what the effects are so that we will know whether to do so or not.

Just the fact that you ask for so much money on something the public feels there must be something wrong or you wouldn't do it under present conditions. That's the angle of it that I see.

Anyway, may I say that the farmer hasn't got a better friend or a more effective friend through the years than our friend from California. I understand California is going to get seven new Members. I hope they will be in your class.

Mr. BROWN. I just hope I'll be here, Mr. Chairman.

Mr. WHITTEN. Well, that was presumed. We didn't have to say that. We already feel that way.

Mr. BROWN. Mr. Chairman, some of the Members I am going to try, if they can spare the time, to take a look at a four-minute videotape I have on the salinity. I think I have approached you about it.

Mr. WHITTEN. I was a little loose with my language. I said "new Members." I should have said "additional Members."

Mr. BROWN. Thank you very much, Mr. Chairman.

Mr. WHITTEN. Thank you. We have been glad to have you.

[The prepared statement follows:]

STATEMENT OF CONGRESSMAN GEORGE E. BROWN, JR.

BEFORE THE
HOUSE COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEE ON RURAL DEVELOPMENT,
AGRICULTURE, AND RELATED AGENCIES

MARCH 29, 1990

Mr. Chairman, Mrs. Smith, distinguished colleagues, it is a pleasure for me to once again be able to appear before this subcommittee to offer my testimony on the appropriations request for the Department of Agriculture. I have come to look forward to this annual event and a chance to speak with you about these areas of mutual interest.

This morning, the subcommittee which I chair on the House Agriculture Committee, the Subcommittee on Department Operations, Research, and Foreign Agriculture, marked up the research, extension, and teaching title of the 1990 Farm Bill. During that process, as in past Farm Bills, I have come to appreciate your position, as numerous valuable proposals come before us and we must pick and choose among them. It is not an easy task, especially in these days of limited federal funding.

Today I would like to offer some general views on the programs of interest to me and my constituents and then deal with some specific issues. The President's proposal for FY'91 contains three major thrusts which I would like to discuss: food safety, a new research initiative, and water quality.

In the area of food safety, we are struggling in the House Agriculture Committee with amendments to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) while the Energy and Commerce Committee is considering changes to the Federal Food, Drug, and Cosmetic Act (FFDCA) on a parallel track. The pressures on us are great and the public concern about food safety due to events last year has prompted all of us to take some positive action.

The Administration proposes a $71 million increase in efforts at the Department of Agriculture (USDA) in the area of food safety. I applaud this increased emphasis, especially in the area of dealing with pesticide residues on food. The additional information collected will assist the Department in its operations, especially as they relate to the pesticide regulatory program at the Environmental Protection Agency (EPA).

I must question the direction of the major increase proposed for a residue testing program, however. The proposed program does not yet have a formal plan in place and does not seem fully coordinated with the regulatory or monitoring programs at EPA or the Food and Drug Administration (FDA). At the same time, my

farmers in California are having to pay tens of thousands of dollars for residue testing as part of experimental work designed to test pest control alternatives and their effect on reducing residues. I feel that this federal residue testing effort could be better used if directed at ongoing integrated pest management (IPM) work designed to reduce residues, rather than a major testing program which seeks to replicate EPA, FDA, and state market basket residue studies. In this regard, I endorse the efforts in the private sector to expand the amount of IPM funding, especially for the implementation of existing methods by using the Cooperative Extension Service. If the funding is to be used for national market basket residue testing, it would be better placed within FDA.

The Administration proposes a major new research initiative in competitive grants of $100,000,000, an increase of $57.5 million over the current funding levels. I am fully supportive of this initiative and urge you to seriously consider this request. I have felt for some time that our agricultural research efforts directed at bringing in the broadest range of researchers focused on problems of critical importance to agriculture was needed. There are many exciting new areas of opportunity which are languishing due to inadequate research funding.

Now I have a long history of advocating this type of research and I am aware of your reservations about competitive research grants. But I think we are all seeking the same goal: a more productive agricultural system which takes full advantage of exciting new areas of science and technology. I hope that since we are following the same goal that we can come to some agreement on how to get there.

The Administration proposes an additional $52 million for their water quality efforts. I am again in agreement with the Department on the need to expand their efforts. We in the subcommittee have been hounding the Department for the last few years in this area, especially in the area of planning and coordinating their water quality work, and I am glad to say that their efforts are paying off.

The area of water quality is very important to each of our districts. In the west we have different water quality problems, especially in the area of water salinity and its effect on the land. In California it is estimated that about $600,000,000 in production is lost each year to salinity problems.

This, of course, leads me to once again ask the subcommittee to continue its efforts to modernize the U.S. Soil Salinity Laboratory at Riverside, California. The subcommittee has been very helpful to date in recommending funding for the planning and design work for the facility, and the final engineering plans are due shortly. You have also helped with the first portion of the construction funding, which I greatly appreciate. It is my hope

that the remaining construction funding can be approved this year so that we can start work on the facility and begin to enhance our research efforts in this vital water quality area.

As I have stated in the past, the existing facility is aging and is trapped in a downtown area of Riverside. The University of California at Riverside has made land available for the new laboratory and will be able to offer a number of supportive services and functions which will decrease the operating costs of the facility. All that remains now is to get the facility construction underway.

I think that these three initiatives, food safety, expanded research, and water quality, show that the Department of Agriculture is moving to respond to the critical challenges and opportunities which face agriculture today. I am encouraged with the Department's response in these areas, even though I might differ with some of the specifics of their proposals.

As we attempt to craft the 1990 Farm Bill, we will likewise be trying to move the Department in new directions in areas of food safety and the environment, in research designed to increase the competitiveness and profitability of agriculture in this country, and in our continuing efforts to retain and expand export markets. I hope to work with members of this subcommittee as we try increase agriculture marketing opportunities through the commercialization of new crops and new products from existing crops. As we move ahead on the Farm Bill, I look forward to working with the members of this subcommittee and hope that we can work together.

Thank you for your attention today.

THURSDAY, MARCH 29, 1990.

BIOTECHNOLOGY DEVELOPMENT

WITNESSES

HON. CLIFF STEARNS, A U.S. REPRESENTATIVE FROM THE STATE OF FLORIDA

DR. DONALD R. PRICE, UNIVERSITY OF FLORIDA BIOTECHNOLOGY DEVELOPMENT COMPLEX

Mr. WHITTEN. Now we have Congressman Cliff Stearns of Florida.

I'm going to ask you to put your prepared statement in the record and talk off the cuff. We have a very busy floor calendar today. Hit the high points. Sometimes some witnesses spend a lot of time reading. That's not true in your case, but we will put your statement in the record and ask you to touch on the high points in the interest of time.

Mr. STEARNS. Thank you, Mr. Chairman.

It is a pleasure to be here to introduce my distinguished professor who has been Vice President of Research at the University of Florida since 1984 and also serves as President of the University of Florida Research Foundation.

He is a native of Indiana—and I might add Cloverdale, Indiana. He holds three degrees in agricultural engineering, a bachelor of science, a doctorate from Purdue, and a master's from Cornell.

Mr. Chairman, Doctor Price serves as Program Manager in the Office of the Assistant Secretary for Conservation and Solar Applications at the United States Department of Energy. In 1978 he was assigned to President Carter's reorganization project in the Executive Office of the President.

Most recently, Doctor Price has been designated a recipient of Purdue University's distinguished engineering alumni award. This award is presented once a year to a select group of alumni whose accomplishments indicate potential for future success and whose contributions to their respective field have been outstanding.

He will be testifying, Mr. Chairman, on the Biotechnology Development Complex at the University of Florida. This project is of critical importance to the Florida agriculture industry—the second-largest industry in the State except for tourism.

I am pleased, Mr. Chairman, to introduce to you the distinguished Don Price, Vice President for Research at the University of Florida.

Mr. WHITTEN. We will be glad to hear from him.

Dr. PRICE. Thank you, Congressman Stearns.

Chairman Whitten and members of the committee, I am pleased to have this opportunity today to talk to you in support of a very specific funding request to complete the construction of a biotechnology facility at the University of Florida. You have already provided the planning and preconstruction funding to initiate this project, and we now respectfully ask if we can have the rest of the support to complete it.

In August, 1987, we established the Biotechnology Institute for Technology Transfer. This unique institute has a mission to facili-

tate the patenting, licensing, and commercial development of biotechnology developments from the research program.

In order to accomplish this mission, in 1987 we submitted a proposal to the U.S. Department of Agriculture and USDA completed a merit review of the proposal and appointed a team of scientists to visit the University and to review our plan.

That team of scientists on the Review Committee gave us a very positive endorsement of the project to the USDA.

The Congress appropriated $600,000 in 1988 for planning and preconstruction. Subsequently, the Florida Legislature matched the $600,000 request. In addition to that, the University has committed $2 million to the project and a private developer, the Talquin Development Company, agreed to build two supporting facilities at a cost of about $4 million.

In 1989 the Congress appropriated $1.55 million of the remaining $5.4 million requested for construction. The Florida Legislature committed to matching all funds appropriated by the Federal Government.

The $1.55 million, with a match from the State, has allowed us to construct one of the buildings of the total complex, the BSL-2 large animal containment facility used for testing of new vaccines. This will be completed and ready for occupancy later this spring.

We need the remaining $3.85 million from the USDA this year in order to complete this important project. The remaining funds are needed to construct the laboratory and office complex to carry out our research and development for effective technology transfer effort.

The $6 million eventually to be invested by the USDA and the Federal Government will result in a $6 million direct match from the State of Florida, $2 million of University funds, and $4 million in additional support buildings provided by a private developer.

The University is moving aggressively to build a strong and expanded program in biotechnology research. Our research program is probably listed in the top five in the nation, and the results of last year were $60 million in research support for biotechnology research.

Senator Chiles first developed an interest in this activity because of the need for us to be competitive in the world market. He saw the electronics industry being picked up and utilized by foreign countries at a better rate than we were able to commercialize it here at home. He did not want—and we do not want—that same thing to happen with our developments in this new area of biotechnology, and we will certainly do our part to build this important industry right here at home.

We have the financial commitment of the University, the State of Florida, and the private sector. What we need now is for you to complete your commitment that you started with the generous appropriation you have given us already so that we can go ahead and complete this important complex.

We had in this last year 35 new biotechnology patents that were filed at the University of Florida. We had four new start-up biotechnology companies that already have been formed with the help of the Biotechnology Institute, and we anticipate many more in the future.

This is not just a resource for the University of Florida and for the State of Florida; it is a resource for the Southeast and for the whole nation. We anticipate being able to work with industry and other entrepreneurs in starting up new companies with biotechnology developments.

Thank you very much for your time. Congressman Stearns and his staff will be able to provide any additional information as you move along through the budget process.

Mr. WHITTEN. Thank you very much.

I shall not repeat what I said earlier about our problems. First we will have to have a budget, and then we will face Gramm-Rudman, then we will face a request to cut the agriculture appropriation $1,400,000,000. Then, when we get that agreed to, we have got to meet and find out what is available among the agencies. So you can see the problem we have. We try our best to do it. We do recognize the importance of agriculture.

We appreciate your appearance. We will just have to do the best we can.

Dr. PRICE. Congressman, I appreciate that.

Mr. WHITTEN. Thank you.

Mr. STEARNS. Thank you, Mr. Chairman.

[Dr. Price's prepared statement follows:]

PREPARED TESTIMONY
Before
Rural Development, Agricultural, and Related Agencies
Subcommittee on Appropriations
by
Donald R. Price, Ph.D.
Vice President for Research
University of Florida

Thank you Mr. Chairman and members of the committee for this opportunity to make a brief statement in support of a request for funding to complete the construction of biotechnology facilities at the University of Florida. You have already provided planning and preconstruction funding and we respectfully ask for your support to now complete the project.

In August of 1987 we established the Biotechnology Institute for Technology Transfer. This unique institute has a mission to facilitate the patenting and licensing of new biotechnology developments, transfer of research results from the laboratories to the commercial sector, training of professionals in the use of biotechnology techniques and supporting entrepreneurs in the start-up of new biotechnology companies. In order to accomplish this mission, plans were developed to build the necessary facilities to support the institute. A proposal was submitted to the United States Department of Agriculture (USDA) for matching funds to develop the facilities. The USDA completed a merit review of the proposal and appointed a team of scientists to make a site visit to evaluate our plans. The team made their site visit in May, 1988 and as a result gave a strong positive endorsement of the project to the USDA. The Congress appropriated $600,000 in October, 1988 for planning and preconstruction. Subsequently, the Florida Legislature matched the $600,000. In addition, the University committed $2 million to the project and a private developer, The Talquin Development Company, agreed to build two supporting facilities at a cost of $4 million.

In 1989, the Congress appropriated $1.55 million additional funding for construction. The Florida Legislature committed to matching all federal funds. The $1.55 million, with a match from the State, has allowed us to construct one building of the total complex. A BSL-2 large animal containment facility is near completion and will be available for use in vaccine testing later this spring.

We need the remaining $3.85 million from the USDA this year in order to complete this important project. The remaining funds are needed to construct the laboratory and office complex to carry out research and development for effective technology transfer. You provided all the necessary planning dollars and the first important facility is near completion. The full $3.85 million will be matched by the State and this will allow us to complete the project. The $6 million invested by the USDA will result in a $6 million direct match from the State, $2 million in University funds to equip the facilities and $4 million in additional support facilities provided by a private developer.

The University is moving aggressively to build a strong and expanded biotechnology research program. An interdisciplinary center for biotechnology research has been established on the campus to support basic research in agriculture, health and veterinary sciences, and engineering. This effort has resulted in a program of biotechnology research that is undoubtedly already among the top five (5) in the nation. The results generated from this large and diverse basic research program will be effectively transferred to the commercial sector through the Biotechnology Institute. This institute will, in my opinion, become a valuable resource to the State of Florida, to the Southeast region and to other parts of the nation. The completion of these facilities that you have already provided the planning money to develop are essential to meet the full potential of this project. Senator Chiles first developed an

interest in this activity because of the need for the U.S. to be competitive in the world marketplace. This institute is a major step toward keeping the biotechnology business growing right here in America. We will certainly do our part to build this important industry at home.

We have the financial commitment of the University, the State of Florida and the private sector. We now ask for your help to complete what you were generous enough to help us start in 1988 so that we can accomplish the goals for effective technology transfer in biotechnology research developments.

Since 1987, more than 35 biotechnology patents have been filed at the University. Four new start-up biotechnology companies have already been formed with help from the Biotechnology Institute, and we anticipate many more in the next few years. The Biotechnology Development Complex, when fully complete, will be the essential cornerstone of our plan to take a leading role in capitalizing on the investment in basic research by developing new products from biotechnology for the benefit of the community, the State, and the nation.

Examples of inventions and discoveries include: safer biopesticides, purer vaccines, natural products such as human insulin, and genetically altered crops which product their own natural biological pesticides. Engineered bacteria can turn paper garbage and plant trash into natural gas or fuel grade alcohol. The facilities at the Institute are designed to reap the rewards of public investment in basic biotechnology research which exceeded $60 million at the University of Florida last fiscal year.

Thank you for your time, and Congressman Cliff Stearns and his staff will be able to provide you with additional

information about this program at any time during your budget discussions.

THURSDAY, MARCH 29, 1990.

TRADE CENTERS

WITNESSES

HON. NORMAN D. DICKS, A U.S. REPRESENTATIVE FROM THE STATE OF WASHINGTON

DR. BRUCE R. LIPPKE, UNIVERSITY OF WASHINGTON

DESMOND O'ROURKE, WASHINGTON STATE UNIVERSITY

Mr. WHITTEN. We will now hear from our colleague, Norm Dicks. We are glad to have you, Norm.

Mr. DICKS. Mr. Chairman, I appreciate the opportunity to be here with you today. It is my pleasure to appear with Doctor Bruce Lippke, Director of the Center for International Trade and Forest Products at the University of Washington.

As you know, this program, in combination with the international marketing program for agricultural commodities and trade impact at Washington State University—that is in Congressman Foley's district—plays an important role in the development of new markets for Pacific Northwest forest and agricultural products, as well as forest and agricultural research.

Before Doctor Lippke begins his testimony I would like to first thank this subcommittee for last year's fiscal year 1990 appropriation of $1 million in matching funds, which went to CINTRAFOR and IMPACT. These funds are being used to expand the Center's work in information services, research, graduate education, and outreach to the public. In addition, funding enhances these trade centers in their work on new marketing techniques in foreign countries—particularly those of the Pacific Rim.

With the trade deficit estimated at $108 billion, I think we need to support the U.S. farmers and foresters in finding new markets for their products abroad; therefore, I ask this subcommittee's continued support for these worthy programs and request funding at $2 million for fiscal year 1991.

Again, I understand the problems that the chairman has spoken to just a moment ago, but I appreciate the continued help and support of this subcommittee.

Mr. WHITTEN. Thank you very much.

Mr. DICKS. Doctor Lippke?

Mr. WHITTEN. We are glad to hear from you, Doctor.

Mr. LIPPKE. Thank you, Mr. Chairman.

Both the Center for International Trade an Forest Products at the University of Washington and IMPACT, the agricultural commodities trade center at Washington State, are fully-operational trade centers. They are charged with the expansion of market opportunities in agricultural and forest products. They are funded by State appropriations, University funds, private grants, and the Federal appropriation under the international trade development center authorization.

Both have very effective programs in information services, research, teaching, outreach, and public service. Each has a growing list of clients being assisted by publications on technical and marketing research and policy analysis and by conferences and work-

shops on current issues and by a flow of trained graduates, as well as by some new products and processes that increase the competitiveness of these sectors.

Both centers have worked very closely with other academic centers, government, and industry, and frequently use the multidisciplinary expertise available from other departments.

While the whole nation benefits from these efforts, the regional location is important. Washington State is one of the leading States in international trade. The agricultural and forest products are leading sectors there, with nearly $20 billion in gross output and about $4 billion in export trade.

Washington State provides 40 percent of the nation's solid wood exports and 25 percent of both the solid wood and pulp and paper product exports.

Now, the concentrated efforts of this partnership between the State and Federal Government and the trade centers and private industry has had a significant impact on trade. Over the last three years the value of U.S. lumber exports has increased 140 percent, the value of pulp and paper products by 90 percent, with a total increase in all forest products contributing $6.1 billion to the improvement in our balance of trade.

Today we are exporting to Japan both more dimension lumber that is used in Japanese housing construction modeled after U.S. practices, as well as more custom-cut metric lumber to serve the Japanese traditional post-and-beam construction methods. Those increases resulted from demonstration housing projects we did over there in Japan, considerable work on codes and specifications, and it really took the education of both the buyer and the supplier to achieve those results.

Now, we were funded at a $2 million level for a two-year period. We are requesting an increase in funds. The State and private sector have increased their support considerably over the last couple of years because of these expanding trade issues, and there are big opportunities there. As a consequence of that, we feel that it is appropriate to ask for the matching fund increase that goes with those increases.

We have, in fact, supported quite a bit—if you want to get a flavor for the kinds of requests that have come in for these increases, they come from all sectors—the local, the State, and the Federal. And the private companies are also interested in expanding this.

The recent increases that you have seen in these exports are really just the tip of the iceberg. The trend can actually be accelerated it if is supported by increased promotional and educational efforts and at reducing the barriers to opening those markets.

The export opportunities that we have have to be looked at in conjunction with the increasing environmental attention given to the region. As a consequence, it is consuming more time of nearly everyone in policy making. Both new research and education on these issues are going to be required to narrow the differences and reduce the effort at the government level for establishing a common ground for decisions.

Washington's international trade centers are succeeding with their mission. We have demonstrated the ability to marshall the

results of research and instruction and public service and to apply those results to the pressing problems of agriculture and forestry.

We have contributed significantly to a restoration of the confidence in the natural resource industries—that is very important to investment in the area—and in restoring the economic health, while contributing also to the economic prospects in depressed areas. The Federal matching funds have been and will remain very critical to our effectiveness.

I thank you for the opportunity to appear, and I would be happy to answer any questions that you might have.

Mr. WHITTEN. Thank you very much. We have always supported forestry and strongly believe in it.

A few years ago we had problems where the Japanese would buy logs—they had sawmill ships just off the coast where they would buy their logs at a reduced cost, saw up the lumber, and ship it over as lumber. Have we been able to stop that?

Mr. LIPPKE. We have had a much larger increase in manufactured products. We do receive very high premium prices for the raw materials. In the last business cycle we have moved up from 40 percent of our export products being manufactured products to 60 percent.

Mr. WHITTEN. The question was have we gotten around having Japanese ships off the coast that buy logs and saw them up into lumber at sea and then, in the process, get reduced prices?

Dr. LIPPKE. No products are sawed up at sea and come back to the U.S. Once lumber gets into Korean and Japanese markets, small amounts of it might come back in furniture.

Mr. WHITTEN. That is still not answering my question. Have we still got the ships buying logs and doing their own sawing.

Mr. DICKS. If I could answer that, Mr. Chairman, they still buy a large number of raw logs that they process. We are trying desperately to get them to buy more finished products. That percentage has actually gone up rather substantially in recent times.

Mr. WHITTEN. Is it a problem we can try to help you with? That is the reason I am asking.

Mr. DICKS. Absolutely, and we could use your help. Right now the Administration is trying to get the Japanese, through the section 301 process, to deal with a certain number of these issues that go directly to this matter. When you compare it to Europe and anywhere else, the Japanese, as a percentage, take a lot less finished products than other people do. So we are not getting that value added, though, as Doctor Lippke points out, they do pay a very high premium for these raw materials.

But what they are doing is protecting an antiquated series of small mills in their own country for political purposes.

Mr. WHITTEN. What bothers me—and I'm not going to delay it because we are all tight time-wise—but what gets me is that we still don't realize we live in a competitive world. We are the only ones that open our doors to almost any kind of import. We are running a trade deficit of about $170 billion a year because we are letting everything in here, and we don't recognize that these other countries keep us out. You get rid of one thing and they come up with another.

We can't send cattle to Britain because of foot-and-mouth disease—they've got it and we haven't. So most of these things—you get rid of one prohibition and they come up with another prohibition.

You can add most anything over here if it doesn't hurt. In the rest of the world they won't unless it helps. All they have to do is holler about running out of business. The purpose is to keep us out, not because health is involved.

Now, we deal with this thing. That's the reason I'm asking. I'm not taking it out on you, as such, but it is a real one.

Dr. LIPPKE. Well, we are at the core of the effort to educate them on the value of our products and to break down those barriers.

Mr. WHITTEN. They are already educated—more so than we are. They are running a sound business. They are looking out for their country.

Dr. LIPPKE. We are making considerable———

Mr. WHITTEN. We don't need to teach them. They have already shown us.

Mr. DICKS. We think we can show them something here. We think we do a better job with———

Mr. WHITTEN. We listen to all of this right here, if you can understand.

Mr. DICKS. The Chairman is absolutely right: we still have a long way to go with the Japanese.

Mr. WHITTEN. Thank you very much.

Mr. LIPPKE. Thank you.

Mr. WHITTEN. It is always good to see you.

Mr. DICKS. Thank you, Mr. Chairman.

[The prepared statement follows:]

Proposal for Increased FY1991 funding of Washington State's International Trade Development Centers in Agriculture and Forestry

Testimony before
House Committee on Appropriations
Subcommittee on Rural Development Agriculture and Related Agencies

March 29,1990

Submitted by:

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Introduction: Section 1419 (a) of the 1985 Farm Bill included provisions for "Grants to States for International Trade Development Centers" by adding Section 1458A to the National Agricultural Research, Extension and Teaching Policy Act of 1977. These provisions recognize the need to enhance the export potential for agricultural products, including forest products, with a strong cooperative effort between the federal government, the states, the private sector and the public colleges and universities.

Washington State is one of the leading states in international trade. Agricultural and forest products are leading sectors in both gross state output and their contribution to the federal trade balance. In 1988, Washington's agricultural products and food processing generated $10 billion output with $1.1 billion in exports, while forest products exceeded $9 billion output with over $3 billion in exports.

In 1984, in response to the pressing needs of natural resource based industries, the State of Washington established the Center for International Trade in Forest Products (CINTRAFOR) at the University of Washington and the International Marketing Program for Agricultural Commodities and Trade (IMPACT) at Washington State University. These International Trade Centers are cooperative state-private programs charged with the expansion of market opportunities for agricultural and forest products, and funded by 1) state appropriations, 2) university funds, 3) private grants, and 4) federal appropriations under the International Trade Development Center authorization. Strong linkages and coordination to existing federal programs involved in international trade are maintained.

In FY 1988 and FY 1989, Congress authorized a cumulative total of $2,000,000 in federal matching funds for the two centers, distributed $846,000 to CINTRAFOR and $1,154,000 to IMPACT. A requested increase in FY 1990 funds was deferred pending a review by the Survey and Investigations Staff of the Committee on Appropriations, and the continuation funds were decreased by 1.3% due to GRH. That review has since been completed with positive results. In addition, state and private sector support has been renewed with increases in a number of project areas as a consequence of the rapid expansion of trade issues and opportunities.

Request for Funding FY 1991: As a consequence of increased needs, positive reviews and a funding base that now qualifies for increased federal matching support, we are requesting $2,000,000 for program development and enhancement in FY 1991, including $846,000 for CINTRAFOR and $1,154,00 for IMPACT. The Centers' operating structure, programs and activities, and justification for the requested increase are briefly described below.

Operating Structure of CINTRAFOR and IMPACT: Both centers are fully operational and meet the requirement for cooperative International Trade Development Centers authorized in the Farm Bill. Both were established by the Washington State Legislature in 1984 at the two major universities responsible for forest products and agriculture, respectively. They have as a legislated objective the expansion of trade and market opportunities for US agricultural and forest products. Supplemental funding from private sector sources is consistent with matching requirements.

Both institutions have long established programs in agriculture and forest products providing much specialized expertise to the centers. Both have international trade programs including joint programs with other departments and operate with joint state and federal agency participation and cooperation. Both have programs elements stressing communication and dissemination of information, provide symposia and workshops as a regular part of this effort, and have established research programs closely linked to database activities.

CINTRAFOR Programs and Activities are focused in four program areas:

1. Information Services - INTRADATA includes the bibliography of publications and a data base containing statistical data related to trade in forest products made available to a broad spectrum of users.
2. Research is directed towards the major issues impacting trade. Projects include jointly funded cooperative efforts and externally secured funding.

3. Graduate Education currently includes 12 graduate students specializing in International Trade, non-degree training for industry and government, cooperative efforts in Law and Public Policy, and the broad inclusion of research results in the colleges curriculum.

4. Outreach-Public Service provides for a comprehensive dissemination of information with symposia, conferences, seminars, workshops, publications, and consultations for industry, agency and other users.

CINTRAFOR's Funding and Achievements for FY 1989 include, in addition to appropriated federal funds, $160,700 in state funding, $286,000 from the University, and $246,000 in non-state funds from private grants, joint cooperators and continuous education. For the 1989-91 biennium, ongoing state funding was enacted providing $321,400, with additional extensions expected for special projects. Federal matching funds have permitted the development of a strong base for future research and education; however, these funds have declined approximately 20 percent from FY 1988 to FY 1990 adjusted for inflation, including pay increases. Funding for 1989 supported the following achievements:

Information Services- INTRADATA: processed trade data and published newsletters on the value of forest products trade, implemented systems for local area network access, produced and distributed the Washington State Forest Products Trade Directory, and provided papers on errors affecting trade data.

Research- 13 projects documented in working papers and one patent application Projects include 4 country profiles, documentation and a base case for an updated and restructured Global Supply and Trade Assessment project, Poplar pulping properties, pulp-fiber filler patents, Japanese construction technology transfer, furniture market potential in the Pacific Rim, value adding opportunities, data bank of secondary manufacturing firms, and flexible manufacturing policies for rural employment.

Education and Outreach- 5 Masters degrees with center support, 6 workshops/symposia, 4 newsletters, many visiting faculty, agency, and company consultations, trade negotiation support, Japanese Government Imported Housing Committee, and many outside presentations.

Requests for expanded research and education efforts come from local, state and federal government, and private companies and are in response to the accelerating structural change taking place in world markets. Lumber and paper product exports in the northwest have each increased by $500 million in just the last 3 years. These are the result of past cooperative efforts, including the center's participation, to educate exporters, to promote our products, and to break down barriers. But they also represent just the token beginning of a further opening of foreign markets. This trend can accelerate as a consequence of the world's changing competitiveness and

indebtedness if supported by increased efforts at reducing the barriers to open these markets. The impacts on US producers and communities include more rapid obsolescence, regional revenue and employment shifts, tax burden changes and a trend toward a decline in rural ports and processing.

These issues are being further embroiled in the increased attention to environmental issues with adversarial policy disputes, which can only be resolved with more and better research and education. Both state and federal governments are being forced to commit much greater efforts to the resolution of these issues without the benefits of an adequate base of research or the analysis of a range of policy alternatives. Both new research and education on these issues will be required in order to narrow the differences and reduce the effort at the government level for establishing a common ground for decision.

Additional CINTRAFOR funding would be focused on: 1) additional research on market opening mechanisms supportive of trade negotiations while also including the opportunity for new and customized products, 2) new processes that provide increased productivity and value-added, including fillers and recycling, 3) secondary manufacturing opportunities, especially those targeted for rural processing and rural ports, 4) timber availability and management options that can provide a more objective basis for resolving timber and multiple use obstacles consistent with our opportunities to expand exports, and 5) expansion of outreach educational programs by developing working groups and forums to use more directly the available research for analyzing new policies as a substitute for the hardening in views and use of adversarial tactics of recent years.

IMPACT's Funding and Achievements for FY 1989 include, in addition to the appropriated federal funds, $596,500 in state funding, $300,000 in university support and about $500,000 grant funds, primarily from agencies and organizations seeking assistance in international marketing programs. Funding during 1989 supported research on technology transfer, market applications, new product and process development and training and education programs.

Research: 40 research projects involving about 100 faculty and technical personnel included studies on Asian market opportunities, the identification of new products, opportunities for increased competitiveness both in new crop varieties and improved processing and the resolution of service problems. Advanced mineral analysis and non-destructive testing devices are contributing to apple quality and margins. Understanding the causes of ergot in grass seed, blackspot bruise in potatoes and blackrot in cabbage seed are contributing to enhanced export values. Based on marketing surveys, new products have been introduced such as Azuki beans for the Japanese, along with trials for edamame (edible soybeans). Other products under preliminary study include wasabi radish,

chicory, sweet corn and melons. Japanese Wagyu cattle may open the way to a premium market for beef.

Education and Training: Numerous conferences and seminars to discuss results and applications have been organized around many of these topics.

Additional IMPACT funding would be focused on: 1) several products with a high potential of acceptance in Japan but with higher research plot development costs, such as the wasabi radish, 2) the development of new industrial uses for existing products such as starch, gluten, fiber, etc., from grains and legumes, and sweeteners from chicory offering unique market niches, 3) supporting information needs for trade negotiations surrounding Europe 1992, the Uruguay round of GATT, and the Canada Free Trade Agreement, 4) new technologies that can improve the competitiveness of producers in the areas of apple sorting, storage life of fresh produce, and citric acid dips to improve shipping quality of beef. (5) Increasing the effectiveness of extension programs for international marketing information is also a high potential.

Washington's International Trade Centers are accomplishing their mission: CINTRAFOR and IMPACT have demonstrated that they can marshall the results of scientific research, instruction and outreach and apply these to the pressing problems of agriculture and forestry in international marketing. They have helped to give the natural resource based industries the confidence to overcome economic, social and technical barriers to trade and have helped restore jobs, incomes and economic prospects in depressed rural areas. Federal matching funds have been and will remain critical to the effectiveness with which they can carry out their mission.

THURSDAY, MARCH 29, 1990.

AGRICULTURAL RESEARCH

WITNESS

W.P. "BILL" THOMAS, DELTA COUNCIL
CHIP MORGAN, DELTA COUNCIL

Mr. WHITTEN. Mr. Thomas and Mr. Morgan?

My colleague, Mike Espy, is sorry he couldn't be here. He has asked that the statement be put in the record. We would be glad to do it. But I need to call your attention to the fact that he is very much interested, and he sent a letter, along with a statement, which will appear in the record.

[The letter and statement follows:]

33 A

MIKE ESPY
2nd DISTRICT, MISSISSIPPI
Majority Whip at-Large
Committee on Agriculture
Committee on the Budget
Select Committee on Hunger
Chairman,
Domestic Hunger Task Force

Congress of the United States

House of Representatives

Washington, DC 20515

March 28, 1990

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218 Cannon House Office Bldg
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Wardell C. Townsend, Jr.
Administrative Assistant

The Honorable Jamie L. Whitten
Chairman
Committee on Appropriations
H-218 Capitol
Washington, D.C. 20515

Dear Mr. Chairman:

I am sorry that I could not be with you before the subcommittee today. However, Mr. Bill Thomas, Vice-President of the Delta Council and a constituent of mine, will be testifying. I ask that you please make the attached brief statement a matter of record.

Thank you and best wishes!

Sincerely,

MIKE ESPY
Member of Congress

STATEMENT OF CONGRESSMAN MIKE ESPY OF MISSISSIPPI
BEFORE THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE,
AND RELATE AGENCIES

COMMITTEE ON APPROPRIATTIONS
MARCH 28, 1990

THANK YOU MR. CHAIRMAN. I WOULD LIKE TO RECOGNIZE ONE OF TODAY'S WITNESSES, MR. BILL THOMAS, VICE-PRESIDENT OF THE DELTA COUNCIL AND ONE OF MY CONSTITUENTS.

I REGRET THAT I WILL NOT BE ABLE TO REMAIN AND HEAR YOUR TESTIMONY, BUT I WAS ABLE TO RECEIVE AN EARLY COPY. I HAVE READ HIS TESTIMONY AND LET ME SAY, MR. CHAIRMAN, THAT I STRONGLY SUPPORT THE IDEAS AND OPINIONS OF MR. THOMAS AND THE DELTA COUNCIL. I BELIEVE THAT AGRICULTURAL RESEARCH IS NOT ONLY AN IMPORTANT, BUT ALSO A NECESSARY PART OF OUR BUDGET. I SAY NECESSARY BECAUSE WE MUST CONTINUE TO FIND NEW WAYS TO IMPROVE AND EXPAND OUR AGRICULTURAL PRODUCTS IN ORDER TO IMPROVE AND EXPAND OUR AGRICULTURAL MARKETS.

I COMMEND YOU ON THE TESTIMONY THAT YOU ARE PRESENTING.

THANK YOU MR. CHAIRMAN.

Mr. WHITTEN. Gentlemen, we are glad to hear from you.

Mr. THOMAS. Good afternoon, Mr. Chairman. I will try to make my statement more brief.

Mr. Chairman and members of the committee, my name is Bill Thomas and I am a cotton and soybean farmer from Greenwood, Mississippi, located in a region which produces more than 70 percent of the State's cotton, approximately 65 percent of the States soybean production, and virtually all of the rice and farm-raised catfish that is so important to our State's economic activity.

As a young farmer, I have quickly recognized that it is only through the technology provided by public sector research at our land grant universities and through the USDA Agricultural Research Service that we have continued to be able to stay in the farming business in our region. I am hopeful that I will be farming many more years and will be able to pass this third generation on to my family. But as I appear before this subcommittee today I would like to stress that farmers in our region will be unable to survive the challenges of insect losses, weeds, diseases, and weather-related issues if Congress does not continue to maintain adequate levels of support for agricultural research.

In reviewing the recent history of Executive budget research for agricultural research, I realized, as an officer of Delta Council, that if it were not for the actions of this subcommittee to restore funds to the functions of agricultural research, we could have been denied the increased production efficiencies which have been achieved on the farm due to technological advances in recent years.

As I prepared for this testimony, our staff provided me with some background on actions that have been taken by this committee which resulted in major commitments to improve production capabilities for farmers like me from every section of this nation.

I was also proud of the fact that this committee has been consistent in its support of conservation and environmental quality initiatives as it pertains to pesticide research, water quality, and a wide range of other critical programs which are aimed at the development of research for conserving this country's rich natural resources.

In addition to meeting the budget objectives of the Executive budget requests year after year, I have noticed that this committee has directed funds to critical agricultural research needs in virtually every State in this nation to serve farmers and the consumers' appetite for an inexpensive food supply.

In conclusion, we would like to request that while this committee considers the fiscal year 1991 Executive budget request, please utilize caution in analyzing competitive grants as the exclusive funding mechanism for setting priorities in agricultural research. We respectfully submit that the more traditional production research objectives have rarely received significant support from competitive research grants. Although it is commendable that Congress has provided increased support for competitive research grants almost every year since they were authorized in the mid-1970s, we would hope that this committee would consider all avenues of funding agricultural research, whether it be formula funds, special research grants, or direct appropriations to the USDA Agricultural Research Service, when determining the most cost-efficient method

for delivering new technology to agriculture and the consumers of this country.

Thank you for the opportunity to appear before your committee today.

Mr. WHITTEN. We appreciate it. The word "competitive grants" is something we have to deal with here. What it means is that your colleges want us to give money without them reporting to anybody or without us telling them how to use it. With special grants we know what we ask them to do and we keep them reporting every year. Major colleges want us to give it to them on competitive grants where we can't tell them what to do and they don't report to us. That's the difference.

There is $100 million in here for this purpose, as I understand it, an increase at the expense of other activities of the Department. We had them check on it and most of them were charging over 50 percent for administrative costs. We had two or three that put it all in administrative costs. We put a limit on it of only 25 percent, so we got $3.5 million in research that they were giving to administration. That's the difference. You can see what we are up against. To do this we have got to cut something else—$1,400,000,000. If you get an answer to that, write me.

Mr. THOMAS. I sure will. Thank you, Mr. Chairman.

Mr. WHITTEN. Thank you.

[Mr. Thomas' prepared statement follows:]

TESTIMONY BEFORE THE HOUSE APPROPRIATIONS
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE,
AND RELATED AGENCIES
MARCH 29, 1990
1:00 P.M.
2362 RAYBURN OFFICE BUILDING
SUBMITTED BY W. P. "BILL" THOMAS
VICE PRESIDENT, DELTA COUNCIL

Mr. Chairman and members of the Committee:

My name is Bill Thomas and I am a cotton and soybean farmer from Greenwood, Mississippi, located in a region which produces more than 70% of the State's cotton, approximately 65% of the State's soybean production, and virtually all of the rice and farm-raised catfish that is so important to our State's economic activity. I appear before you today representing Delta Council, an organization which has served as the voice for agriculture, business, and industry in our region since 1935.

As a young farmer, I have quickly recognized that it is only through the technology provided by public-sector research at our land-grant universities and through the U.S.D.A.-Agricultural Research Service that we have continued to be able to stay in the farming business in our region. I am hopeful that I will be farming many more years and will be able to pass this tradition to my family, but as I appear before this Subcommittee today I would like to stress that farmers in our region will be

unable to survive the challenges of insect losses, weeds, diseases, and weather-related issues if Congress does not continue to maintain adequate levels of support for agricultural research. Ir reviewing the recent history of Executive Budget requests for agricultural research, I have realized as an officer of Delta Council that if it were not for the actions of this Subcommittee to restore funds to the functions of agricultural research, we could have been denied the increased production efficiencies which have been achieved on the farm due to technological advances in recent years.

As I prepared for this testimony, our staff provided me with some background on actions that have been taken by this Committee which resulted in major commitments to improve production capabilities for farmers like me from every section of this nation. I was also proud of the fact that this Committee has been consistent in its support of conservation and environmental quality initiatives, as it pertains to pesticide research, water quality, and a wide range of other critical programs which are aimed at the development of research for conserving this country's rich natural resources. In addition to meeting the budget objectives of the Executive Budget requests year after year, I have noticed that this Committee has directed funds to critical agricultural research needs in virtually every state in this nation to serve farmers and the consumers' appetite for an inexpensive food supply.

In the Far West, this Committee identified and funded important research on fruit in the State of Washington; in the Northern Plains region of the country, this Committee responded to a request by farmers in a multi-state area by establishing the Northern Plains Bio-Stress Laboratory to focus on agronomic issues which are encroaching on farm profits in that region of the country; in the Southeastern area of the United States, actions by this Committee have resulted in special research aimed at urban pest research in the State of Florida; and, in the Midsouth, the introduction of catfish research by this Committee almost a decade ago has resulted in the growth of a major new agricultural enterprise spanning from Oklahoma and Texas all the way to the East Coast. Delta Council would like to praise the actions of this Committee and the Congress for continuing to compile input from farmers, consumers, and other agricultural interest groups throughout this country to identify priority research initiatives.

In conclusion, we would like to request that while this Committee considers the fiscal year 1991 Executive Budget request, please utilize caution in analyzing competitive grants as the exclusive funding mechanism for setting priorities in agricultural research. We would respectfully submit that the more traditional production research objectives have rarely received significant-

support from competitive research grants. Although it is commendable that Congress has provided increased support for competitive research grants almost every year since they were authorized in the mid-1970's, we would hope that this Committee will continue to consider all avenues of funding agricultural research, whether it be formula funds, special research grants, or direct appropriations to the U.S.D.A.-Agricultural Research Service, when determining the most cost-efficient method for delivering new technology to agriculture and the consumers of this country.

Thank you for the opportunity to appear before you today.

Respectfully submitted,

W. P. "Bill" Thomas, Vice President
Delta Council

ADDENDUM

Delta Council would like to ask the Committee to continue its support of the pesticide application technology research initiatives at the Midsouth Regional Research Center of U.S.D.A.-ARS.

Also, we earnestly request that careful consideration be given to the establishment of an aquaculture research center at Stoneville, with special emphasis on catfish research. Aquacultural research aimed at reducing losses to diseases, and off-flavor must be significantly expanded if this alternate agricultural system is to realize its full potential. Currently, catfish research at the Midsouth Research Center located at Stoneville has enabled this industry to expand fivefold during the decade of the 80's and it is estimated that this industry will generate approximately $600 million in economic activity this year. Without expanded research by our land-grant institution and U.S.D.A-ARS, we have reached a plateau in terms of production efficiency and future growth potential in the catfish industry.

In conclusion, we would like to specifically request that funds be maintained for other critical research initiatives that have received the support of this Committee in the past including crop simulation work, cotton ginning research, the demonstration erosion control projects under the soil conservation title, and the final funding increment for the Delta Project.

THURSDAY, MARCH 29, 1990.

INTEGRATED PEST MANAGEMENT

WITNESS

LARRY ELWORTH, PENNSYLVANIA APPLE MARKETING BOARD

Mr. WHITTEN. Mr. Elworth is next.

Mr. ELWORTH. Mr. Chairman, my name is Larry Elworth. I am Program Coordinator for the Pennsylvania Apple Marketing Board. On behalf of the commercial apple producers in Pennsylvania who the Board represents, I appreciate having the opportunity to talk with you today about what growers need in Pennsylvania and across the country from the research and extension system.

On a more personal note, I am especially glad to be in Washington this spring considering that at this time last year I was answering reporters' calls about alar. I can assure you this is quite an improvement over this time last year.

Apple growers and other producers find that, in addition to the daily problems of just trying to raise a crop, they must respond to a whole host of environmental and consumer pressures. In the apple industry we have responded to these pressures by using integrated past management methods. These methods have a proven track record in our industry of doing a couple of things: first of all, improving producer welfare; secondly, minimizing the environmental impacts of our growing practices.

However, if we are to continue making the changes being demanded of us by the economy and by society, at large, we must look to Congress for further resources for these IPM programs—particularly in the areas of applied research, education, and technology transfer.

The benefits of the use of IPM projects are significant. Take, for example, our experience in the apple industry with European red mites—a pest which can be a significant threat to apple orchards. By using IPM methods that preserve the insects which prey on these red mites, we have dramatically reduced or eliminated our need for chemical control measures.

During the nearly 18 years that we have been using IPM to control red mites, Pennsylvania State University researchers estimate that we have saved at least 1.4 million pounds of miticides. That translates, in Pennsylvania, alone, to $14 million of savings to growers. Those savings also amount to 1.4 million pounds of pesticides which never made their way into the environment and never got onto the food that consumers buy.

There are countless other examples of insects and diseases for which IPM has produced similar benefits for growers through better, more cost-effective pest control, and to the environment through a minimal use of pesticides.

Even though, however, there are demonstrable benefits from this IPM programs, they are still not fully used by all apple growers.

As apple growers and other growers across the country try to adopt new methods that require handling lots more information such as IPM methods, they are also faced with learning a whole new set of skills in addition to the skills of just learning how to

raise the crop. For that reason, the widespread use of IPM is limited by the availability of high-quality education and technology transfer programs. Unfortunately, the present demands on the Extension personnel do not allow sufficient opportunities or resources to accomplish that job.

In many instances Extension specialists lack the support staff to adequately conduct applied research projects, just less the resources to design appropriate educational materials or to develop and implement technology transfer programs.

Basic research will continue to have an important role in developing dynamic IPM programs, but in order to increase the accessibility and adoption of IPM we need full and appropriate funding of applied research and practical grower education programs. Some of the most effective work in this area is being done through the regional IPM research programs, but those programs are woefully under-funded.

We also need to have Extension personnel exclusively devoted to IPM education so that they can have the time to spend talking to growers and teaching them the skills and methods that are necessary to implement innovative growing practices.

At the heart of the matter is the simple fact that just adding more money to the research and Extension budget will not, all by itself, make sure that growers have the means necessary to make the changes being demanded of them.

Perhaps more than any other group in agriculture, apple growers are aware of the changes occurring in our environment because of our recent experiences, and we are making changes in the way we grow our apple products.

What remains, though, is for us to make sure that every grower has the ability and the opportunity to make use of the available technology that is already there and that the flexibility and effectiveness of that technology is expanded to all areas of agricultural production.

To do that job we must look to Congress to provide the resources and the direction so that the agricultural research and extension system can fulfill its mandate to put the best, most appropriate tools in the hands of growers.

In providing those resources we strongly urge you to put a high premium on programs that have a direct application to the pressing needs of growers. If you will direct resources and programs in that way, I can assure you that we are more than willing to do the rest.

Thank you very much for your time. I would be glad to answer any questions.

Mr. WHITTEN. Thank you very much. You heard the earlier statements, so I won't repeat them here. We'll do the best we can.

Mr. ELWORTH. Thank you very much.

[Mr. Elworth's prepared statement follows:]

Pennsylvania Apple Marketing Board

Pennsylvania Department of Agriculture
2301 North Cameron St., Harrisburg, PA 17110 (717)783-5418

TESTIMONY

OF

LARRY ELWORTH, PROGRAM COORDINATOR
PENNSYLVANIA APPLE MARKETING PROGRAM

BEFORE THE

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE,
AND RELATED AGENCIES

COMMITTEE ON APPROPRIATIONS

UNITED STATES HOUSE OF REPRESENTATIVES

MARCH 29, 1990

28-669 O—90——26

Mr. Chairman, my name is Larry Elworth and I am Program Coordinator for the Pennsylvania Apple Marketing Board. On behalf of the commercial apple growers in Pennsylvania which the Board represents, I appreciate having the opportunity to talk with you today about what growers in our state and across the country need from the research and extension system. On a more personal note, I am especially pleased to be in Washington this spring considering that at this time last year I was busy answering reporters' questions about Alar. I can assure you that this is quite an improvement.

For those of us in the apple industry, the food safety controversy raised by the issue of Alar on apples has had a significant impact on our livelihoods and on the way we do business. We have, quite frankly, found ourselves on the cutting edge of the entire food safety debate. Because of that position, we have realized that we must redouble our efforts to produce apples in an economically and environmentally sound manner.

It is with that orientation unavoidably in mind, Mr. Chairman, that I make my comments today. Apple growers and other producers find that, in addition to the daily problems of just trying to raise a crop, they must respond to pressures which originate outside of their farms if they want to stay in business. In the apple industry we have responded to these pressures through the use of Integrated Pest Management or IPM methods. These growing methods have a proven track record in our industry of improving producer welfare and reducing the environmental impact of agricultural production. However, if we are to make the changes being demanded of us by the economy and society at large, we must look to Congress to provide further resources for IPM programs, particularly in the areas of applied agricultural research, education, and technology transfer.

Integrated Pest Management in apples and other crops, as described in the Annual Review of Entomology, is a systematic approach to crop protection that uses increased information and improved decision-making paradigms. The results of IPM utilization allow producers to reduce their use of purchased inputs, such as pesticides, and to improve the quality of their pest control strategies. Just as important, this reduced use of pesticides, through field monitoring, and the use of biological and cultural controls, allows producers to minimize the environmental effects of their production methods.

Let me describe a concrete example of how Integrated Pest Management works:

In apple orchards throughout Pennsylvania and the rest of the country, European red mites can severely damage the vigor of trees. By literally sucking the chlorophyll from the leaves of the trees, red mites can seriously affect the health of an orchard. Pesticides have provided control but they are disruptive and expensive. Also red mites have a remarkable ability to develop resistance to miticides in a very short period of time.

In response to this pest problem, entomologists studied the natural history of red mites and discovered a tiny ladybird beetle, which is the size of the head of a pin, that eats dozens of red mites a day. Based on that research, an information-based monitoring system was put together. Using that system, a grower in Pennsylvania can walk into his orchard during the growing season, count the number of red mites and predatory ladybird beetles present, and make a simple decision whether or not to spray.

In many cases, careful attention to the health of these and other predators has dramatically reduced or eliminated the need for chemical control measures. During the nearly eighteen years in which we have used this one IPM technique, Penn State researchers estimate that we have saved at least 1.4 million pounds of miticides. That translates, in Pennsylvania alone, into $14 million dollars of savings to growers. Those savings also amount to 1.4 million pounds of pesticides which never made their way into the environment or onto the food that consumers bought.

This is a single example of how effectively IPM programs work in apple orchards. There are countless other examples of insects and diseases for which IPM has produced similar benefits to growers through better, more cost-effective pest control and to the environment through a minimal use of pesticides. However, even though there are demonstrable benefits to be derived from the use of Integrated Pest Management methods, they are still not fully used by all apple growers.

Part of the reason for this lack of full IPM use is that the methods involve gathering and utilizing a fairly large amount of information. Even so, there is more to making use of IPM than just gathering information. Collecting that information often demands skill in insect and disease identification and sampling procedures.

In addition, utilizing that information means interpreting and analyzing data, often by using computer technology. In short, growers are faced with learning a whole new set of skills beyond those of just growing their crops.

For growers to adopt information-based methods, such as Integrated Pest Management, agricultural research and extension efforts need to pay a great deal of attention to how these methods are actually put into growers' hands. This is especially true given that these methods involve mastering new technical skills as well as new sets of information. Unfortunately the present demands on extension personnel do not provide sufficient opportunities or resources to comprehensively address the challenges for implementing these new methods. In many instances, individual extension agents may not have the background or training to make these new skills and information available to growers. Extension specialists often lack the support staff to adequately conduct applied research projects, much less the resources to design appropriate educational materials or develop and implement technology transfer programs.

Basic research will continue to have an important role in developing dynamic IPM programs. But in order to increase the accessibility and adoption of IPM, we need full and appropriate funding of applied research and practical grower education programs. Some of the most effective work in this regard is done through Regional IPM Research programs, which are woefully underfunded. Another specific need is to have extension staff exclusively devoted to IPM education, with direct links to University staff, who can spend the time to teach growers the skills and methods necessary to implement innovative growing practices.

At the heart of the matter is the simple fact that just adding money to the agricultural research and extension budget will not, by itself, provide growers with the means to make the changes demanded of them. For that reason, it is essential that the vertical integration of research and technology transfer be a high priority. We look to Congress to provide direction for funding so that an emphasis will be put on making practical technology available to producers through solid education and technology transfer efforts.

In the fifteen short years since I started in fruit-growing, the environment in which we farm has changed dramatically. Back when I started managing an orchard, a grower could pretty well make a living if he could just

manage what went on within the boundaries of his orchard. Today forces external to the boundaries of our orchards have as great an effect on whether a grower stays in business as anything that happens on the farm.

Perhaps more than any other group in agriculture, apple growers are aware of the changes in our business environment and we are working to make changes in our growing practices. We have already adopted proven Integrated Pest Management techniques to meet the economic and consumers demands we face. What remains is for us to make sure that every grower has the ability to use the technology available to us and to explore further research options for expanding the flexibility and effectiveness of that technology to all areas of agricultural production.

To do that job, we must look to Congress to provide the appropriate resources so that the agricultural research and extension community can fulfill its mandate to put the best and most appropriate tools in growers' hands. In providing those resources, we strongly urge you to put a high premium on programs that have a direct application to the pressing needs of growers. If you will direct resources and programs in that way, I can assure you that we are more than willing to do the rest.

Thank you very much for the opportunity to speak on this issue. I will be glad to answer any questions you might have for me.

THURSDAY, MARCH 29, 1990.

AGRICULTURAL RESEARCH SERVICE JOB

WITNESS

HON. SID MORRISON, A U.S. REPRESENTATIVE FROM THE STATE OF WASHINGTON

Mr. WHITTEN. Congressman Sid Morrison will be next.

Mr. MORRISON. Thank you, Mr. Chairman. I appreciate the chance to take a minute or two from you and your distinguished colleagues. As those of you on the Appropriations Committee grind through these hours of hearings, my hat is off to you. We always look forward to and support the product that you bring forward.

I am delighted to hear at least part of the testimony of the previous presenter, Mr. Chairman, because it will save a few things that I was going to share with you.

Mr. Foley and I, as you know, represent an agricultural section through the State of Washington, and we have now, as a delegation, a very top priority supported by the Administration's budget of the relocation of an Agricultural Research Service laboratory. This is a case of a leased facility that has been in use for a number of years doing the very work that was just described by the gentlemen from Pennsylvania, developing this integrated pest management program, not just for the Northwest and for all fruits and vegetables, but for the rest of the nation, as well.

I have appeared before you before and you have been willing to provide money for the design of this facility, but what has happened is that the old leased facility used to be out in the country. As things go, the city has grown up around it, and to have an agricultural chemical research facility in the middle of town just doesn't work. The rent has gone up and up and ARS has made this now a very top priority. It is in the Executive budget. They want to get enough money to build the facility and complete it.

The industry is very much involved. We have a tree fruit research industry that collects taxes and has its own source of funding. They are furnishing $500,000 worth of land for this facility working with ARS, and this has been a very cooperative sort of thing. We are eager to get on with it.

The price tag that shows in the Executive budget is $10.1 million. You have provided design money, you have provided two different years at $1 million a year. But, as you know, on these projects they can't actually build them until they have the money in the bank. It is the Executive Branch feeling—certainly echoed by us in the area—that this project needs now to be completed. If we start right away, we can have the completion in time before the lease expires on the old facility, which is nearing obsolescence anyway.

I want to mention just quickly a couple of other things.

In the measure that has now passed the House we included a timber-dependent community provision, taking some forestry receipts and doing what we could to just be aware of what is going to happen to those communities now with the pressure back from the public not to harvest old-growth trees, to be concerned about he

spotted owl, and some other things that I think are typical of these times—that is, we are just going to be harvesting fewer trees.

What we attempted to do was to say these small communities—many of them not sophisticated at all, and you have got some in Mississippi, Mr. Chairman—that just don't have the resources to look around to even keep those communities alive and well. They have served the nation very well. They have harvested in those forests to return a dramatic profit back to the taxpayers of the United States. Now we would like to help them out in a small way.

I don't know how this blends in because, as you know, the authorization package has not passed through the full Congress.

I just want to comment on two other subjects.

The targeted export assistance funds in my area have just been absolutely superb. They have resulted in a dramatic amount of matching money from about 70 different commodities, and are used by small farmers working together and we have gotten a very good return for it in various parts of the world opening markets. Once the team money has opened the markets, we have been able to stay in. We are excited about that.

Not in my formal testimony, but I would like to mention it: with the food safety problems we are having—and my area was probably impacted probably most of any representative by the alar issue. We are extremely concerned that most of the crops that are grown in a lot of America are actually minor-use crops as far as the chemical producers are concerned. We would urge support for the IR-4 program, which is in place, which helps in getting the registration and re- registration of a number of those materials that are used very little.

Mr. Chairman, thank you for your time.

Mr. WHITTEN. Thank you very much. We need to draw a distinction between investment spending and otherwise. That is sound. Thank you very much.

Mr. MORRISON. I wish we could change the budget process to reflect some investments in the ARS lab, for instance, as truly an investment.

Mr. WHITTEN. I don't know when we are going to do that. Everybody knows you can't keep spending and not paying.

Thank you very much.

Mr. MORRISON. Thank you, Mr. Chairman.

[Mr. Morrison's prepared statement follows:]

TESTIMONY OF THE

HONORABLE SID MORRISON

BEFORE THE
HOUSE APPROPRIATIONS
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE,
AND RELATED AGENCIES
March 29, 1990

MR. CHAIRMAN: Please let me first thank you and the subcommittee members for the opportunity to testify before you.

I would like to share with you some of the specific issues within your subcommittee's jurisdiction that could have a positive impact on my congressional district in Washington state.

First, I would respectfully request that you include in the fiscal year 1991 budget the $10.1 million necessary to relocate the Agricultural Research Service laboratory in Yakima, Washington. This lab has a vital responsibility to the entire nation's fruit and vegetable industry. The lab was built in a rural setting that is now crushed by rapid residential and commercial growth and is scheduled to lose its lease. The state tree fruit industry has purchased an excellent new site with the concurrence of USDA officials to relocate the lab. Since no construction can start until the full appropriation is in place, I would ask that you fully fund the project with the requested amount.

The Bush Administration agrees with this request and has included the full amount in the executive budget. USDA officials give the project the highest priority, particularly with the pressures for research on integrated pest management and other techniques to reduce pesticide use.

The House recently passed the Rural Economic Development Act which contains a separate assistance program for forest dependent

communities. This provision serves as a life buoy to a crisis situation which is emerging in the Pacific Northwest and threatens forest dependent communities nationwide. It is becoming increasingly apparent that our nation's timber supply is changing. Harvest levels are decreasing and communities are learning that they must upgrade and modernize their mills, or in some cases, look for diversified industry elsewhere if they are to survive. This is a special and more urgent need than is being felt by our agricultural communities, Mr. Chairman, and requires a custom-made response. Title IX of the Rural Economic Diversification Act answers that need.

Our National Forests return millions of dollars to the U.S. Treasury each year. It is only appropriate that some of this money be returned to the communities which have for decades based their economies on this industry. While the House and Senate still have some differences to work out in Conference, I respectfully request that this subcommittee take the special circumstances in the Northwest into consideration during discussion of rural development and fund Title IX.

I'm pleased that you continue to recognize the importance of the ongoing agricultural research in the Northwest by supporting funding requests for tree fruit and vegetable research at the Yakima and Wenatchee ARS Labs, potato research, wheat research, barley research, small fruits, and pea and lentil research. I would ask that you continue to be receptive to these research funding requests.

I am also particularly interested in supporting funding for the Targeted Export Assistance (TEA) program. TEA funds have played a major role in opening new markets for U.S. agricultural exports. Every commodity group that has received TEA funds has expressed its

overwhelming support for program, because of the trade opportunities these funds have provided.

I would like to thank the subcommittee members for their kind attention and ask them if they have any questions, which I would be happy to answer for them at this time.

THURSDAY, MARCH 29, 1990.

COOPERATIVE FORESTRY RESEARCH

WITNESSES

DR. WARREN S. THOMPSON, NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

ROGER L. MITCHELL & PANEL, NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

Mr. WHITTEN. Doctor Warren Thompson?

Doctor, it is good to see you, sir.

Dr. THOMPSON. It is good to see you, sir.

Mr. WHITTEN. Thank you very much.

Dr. THOMPSON. Thank you. My name is Warren Thompson. I am Dean of the School of Forest Resources at Mississippi State University. It is a privilege for me to present this testimony on behalf of the National Association of Professional Forestry Schools and Colleges. This organization represents the 60 schools and colleges of forestry and related natural resources in the United States.

My remarks will be confined to those supporting the McIntire-Stennis Cooperative Forestry Research Program. This program provides a stable base of support that is critical to the long-term productivity of university-based research programs and is vital to the training of future scientists and educators.

The McIntire-Stennis program emphasis high-priority research that expands our knowledge base and it also provides a foundation to which we can tie practical developments and economic gains.

We urge support for fiscal year 1991 of $18.3 million for this program. I would like to say, Mr. Chairman and members of the committee, that the funds that have been appropriated by Congress in the past for this program have been wisely used. Each dollar in McIntire-Stennis funds that has been appropriated has been leveraged, on average, four or five times to fund research that has both regional and national significance. Collectively, these programs have been an unqualified success. The significance of a university-based research program funded with McIntire-Stennis monies is closely tied to the importance of the forest resource to the economic and social wellbeing of this country and its citizens. These benefits are primarily related to the production and processing of timber.

There are good reasons to believe that forest products will become even more important in the future. The global demand for forest products is increasing, and this country is in a very good position in terms of timber supply and in terms of manufacturing and transportation infrastructure to satisfy a major share of this increase in demand. But we feel that continued profitability of forest-based enterprises will require that the United States develop more efficient production and processing systems if we are to compete effectively in a growing international market where foreign competition is also increasing.

I would like to say, Mr. Chairman and members of the committee, that in addition to the economic benefits that result from forestry research, there is an increasing need for research which fo-

cuses on the many environmental issues related to the management and utilization of the forest resource.

Forested lands provide most of the surface water in the United States. They provide habitat for many species of wildlife, some of which are threatened or endangered. And, of course, these lands provide a wealth of biodiversity. There is also evidence of a relationship between forests and climate.

My point is that public concern about these and other non-timber values have focused unprecedented attention on forest management systems. In all candor, I would like to say that emotions sometimes take precedence over reason. In the absence of a sound data base, there is a possibility that decisions which place unnecessary and unneeded restrictions on forest management practices will be made. I would suggest that the economic consequences of these decisions could be substantial.

The nation's forestry schools are in a good position in terms of research experience and the qualifications of their faculty to expand this effort.

We are fully aware of the critical need to exercise fiscal restraint in light of the size of the Federal deficit, and we know that it is going to take an uncommon amount of leadership to deal with this issue while, at the same time, maintaining momentum in existing programs. We feel that our budget request represents one such program.

While our request for fiscal year 1991 represents an increase of 4.5 percent over the current funding level, the total amount is really not consistent with either research needs or opportunities.

An appropriation of $18.3 million, which we are requesting, will provide funding in constant terms that is equivalent to the 1978 appropriation.

I think it is noteworthy that in recognition of this erosion in support for forestry research that the members of the Executive Board of the American Forest Council unanimously recommended that the McIntire-Stennis program be funded at $25 million, which is a full 33 percent above our request. This U.S. committee represents the major forest products companies in the United States.

In summary, Mr. Chairman and members of the committee, the major focus of the McIntire-Stennis since its inception in 1962 has been the development of research and graduate education programs that have meaning in terms of the scientific and technical needs of the nation's forest resource.

The success of the program in terms of research achievements and overall effectiveness I believe is a matter of record. It is this record and the importance of this resource to the country that provide the justification for our request for fiscal year 1991.

I would be happy, sir, to respond to any questions that you may have or to provide additional information.

Thank you for the opportunity you have provided to speak today before this committee.

Mr. WHITTEN. Thank you. When you see on the global level how much of this country is taken up with trashy-type trees, it makes us realize that we would do well to speed up the reforestation program.

Incidentally, this committee recommended and guided through the Executive Branch the program that we had that some of these military centers that will be closed be turned over to CC type projects such as we had years ago where you could get some of these youngsters out of the drug-infested areas and let them plant trees. I talked to the budget director about taking advantage of it. They have not done so at this time. It makes sense.

Dr. THOMPSON. We appreciate your support.

Mr. WHITTEN. Thank you very much. It is good to see you.

[The prepared statements follow:]

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TESTIMONY

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

OF THE

COMMITTEE ON APPROPRIATIONS
U. S. HOUSE OF REPRESENTATIVES

ON BEHALF OF THE

NATIONAL ASSOCIATION OF PROFESSIONAL FORESTRY SCHOOLS AND COLLEGES

AND THE

COMMISSION OF FORESTRY

OF THE

NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

BY

DR. WARREN S. THOMPSON

DEAN, SCHOOL OF FOREST RESOURCES
MISSISSIPPI STATE UNIVERSITY

MARCH 29, 1990

My name is Warren S. Thompson, and I am Dean of the School of Forest Resources at Mississippi State University. It is a privilege to provide this testimony on behalf of the National Association of Professional Forestry Schools and Colleges (NAPFSC). This organization represents the 60 schools and colleges of forestry and related natural resources in the United States.

Federal appropriations are an essential part of university-based forestry research programs. Funding appropriated by Congress for the McIntire-Stennis Cooperative Forestry Research Program provides a stable base of support that is critical to the long-term productivity of these programs and vital to the training of future scientists and educators. The McIntire-Stennis program emphasizes high-priority research needed to expand our knowledge base and to provide the foundation for future practical developments and economic gains. For 1991, we urge support of this program at $18.316 million.

Funds appropriated for university-based forestry research have been wisely used. Each dollar in federal funds has been leveraged on average by a factor of four to five to fund research programs which focus on problems and opportunities that have both regional and national significance. Collectively, these programs have been an unqualified success. They have helped to expand the market horizons for wood-based commodities, increased the available timber supply, and provided a better understanding of management systems appropriate for multiple-use of forest lands for timber, wildlife, and recreation. These programs have also made solid advances in knowledge of the forest ecosystem and of the basic chemical, physical, and biological forces which influence forest productivity.

The significance of this research program is closely tied to the importance of the forest resource to the economic and social well being of this country and its citizens. These benefits are primarily related to the production and

processing of timber. The United States ranks first among nations of the world in industrial timber production. Forest-based industries employ 8.5% of the U. S. manufacturing labor force and account for 7.3% of the total value added by manufacturing. Forestry and forest products lead all segments of the economy in employment, size of payroll, capital investment, and number of industrial firms in many southern and western states. The growing and processing of timber provide the economic underpinning for literally hundreds of communities in all regions of this country.

There are good reasons to believe that forest products will become even more important in the future. Global demand for forest products is increasing. This increase in demand coincides with diminished wood supplies in many established wood-producing countries of the world. The United States is well positioned in terms of timber supply and manufacturing and transportation infrastructure to satisfy a major share of this increase in global demand. However, continued profitability of forest-based industries will require that the United States develop more efficient production and processing systems if it is to compete effectively in a growing international market where foreign competition is also increasing.

In addition to the economic benefits which result from forestry research, there is an increasing need for research which focuses on the many environmental issues related to the management and utilization of the forest resource. Forested lands are the source of most of the surface water in the United States; provide habitat for many species of wildlife, including some which are endangered or threatened; and provide a great wealth of biodiversity. There is also evidence of a relationship between forests and climate.

Public concern about these and other non-timber values have focused unprecedented attention on forest-management systems. Emotions have at times taken precedence over reason. In the absence of a sound data base, there is a possibility that decisions which place unnecessary and unneeded restrictions on forest management practices will be made. The economic consequences of such actions could be substantial. The nation's forestry schools are in the forefront of research efforts which address these environmental issues and are well positioned in terms of the qualifications of their scientists to expand this effort.

We are fully aware of the critical need to exercise fiscal restraint in light of the size of the federal deficit. It will take a high degree of leadership to deal responsibly with this issue while, at the same time, maintaining momentum in particularly important programs. We believe that our budget request represents one such program because of the returns provided by past research and the opportunity for additional returns from on-going and proposed research.

While our request for FY 1991 represents an increase over the current funding level, it is not really consistent with either research needs or opportunities. The McIntire-Stennis program provides a significant part of the base funding for research and graduate programs in the nation's forestry schools and colleges. An appropriation of $18.316 million will provide support, in constant dollars, approximately equivalent to that provided by the 1978 appropriation. It is noteworthy that, in recognition of this erosion of support for forestry research, the members of the Executive Committee of the American Forest Council unanimously recommended that the McIntire-Stennis program be

funded in 1991 at $25 million. This Committee represents the major forest products companies in the United States.

The major focus of the McIntire-Stennis program from its inception in 1962 has been the development of research in graduate education programs which have meaning in terms of the scientific and technical needs of the nation's forest resource. The success of the program in terms of achievements in overall effectiveness is a matter of record. This record and the importance of the forest resource to the social and economic well being of the country provide the rationale for the level of funding requested.

Thank you for the opportunity to present this testimony. I would be happy to respond to any questions or provide additional information.

THURSDAY, MARCH 29, 1990.

RESEARCH, EXTENSION AND TEACHING

WITNESS

MARY C. GRIM, COUNCIL FOR AGRICULTURAL RESEARCH, EXTENSION AND TEACHING

Mr. WHITTEN. Now we will hear from Mary C. Grim.

Ms. GRIM. It is a pleasure to appear before you today, Mr. Whitten.

I am pleased to appear to offer testimony in support of the agricultural research and education programs of the land grant universities which are funded through the USDA budget.

I am here in the capacity as Chair of the Council for Agricultural Research Extension and Teaching, more commonly known as CARET. CARET is a national grass-roots organization of volunteer leaders who work closely with the agricultural research and education programs conducted by our land grant universities. CARET serves as supporter of, advisor to, and friendly critic of the land grant system.

The land grant system seeks to improve the quality of life for all citizens of our country. As a user of this system, I can assure you that the benefits of the agricultural research and education programs conducted by these institutions do actually reach the American public. The research conducted by these schools is directly related to the needs established at the grass-roots level. The extension arm of the land grant system continues to effectively transfer new technology and information developed by these institutions to the user in simple and effective language.

The higher education efforts work to supply the U.S. with a pool of human capital to perform the research and the education in that system.

Today I am here to offer support for the funding recommendations needed to support all facets of the land grant community. Such information has been attached to my testimony for your consideration.

CARET strongly supports increased funding for the base programs or formula funds in the attachments. These funding mechanisms are critical for this system to survive. They serve as the backbone for all agricultural research and education programs being done by these institutions.

As this subcommittee knows, and expanded technological base does not occur overnight. It takes years of detailed experimentation. In many cases the life of a research grant does not provide enough time to bring research projects to full conclusion. The base program dollars provide a continuous source of funding which is so vital to an ongoing research effort. We can not afford to turn on and off the funding mechanism if we expect the system to provide the long-range results this country needs.

Recently a report entitled "Investing in Research" called for an infusion of new dollars into agricultural research in order to strengthen our food and fiber system.

We at the local level, as has this subcommittee, long recognize the need for additional dollars to be spent on agricultural research and education programs. It is imperative that the U.S. remain a world agricultural leader. We, as a nation, can remain strong and competitive in the world market if we have the tools and information readily available to meet changing demands. In order to do this, we must intensify our efforts immediately.

Through the investment of new moneys in agricultural research and education, the U.S. will be investing in its future. CARET supports any infusion of any new monies into agricultural research and education programs.

I would like to conclude by simply say, as a taxpayer, that Congress is getting a bargain for every dollar it puts into agricultural research and education programs in our land grant system. An impressive example—and it does happen to be from your home State of Mississippi, Mr. Whitten—is a documented $41 return on every Federal dollar invested into its total land grant program. I could go on and cite 49 other examples.

I would like to thank this subcommittee for the support they have offered in the past and for the fine leadership you give to our land grant system.

With increasing urban populations, our nation is moving further away from an understanding of its agricultural base. Our future challenge will be to increase the understanding of food and fiber production among the general public. The land grant system remains committed to delivering this message to the citizens of the United States.

Again, Mr. Chairman, thank you for the opportunity to appear here.

Mr. WHITTEN. Thank you for your appearance. This committee has long believed in the Extension Service and done its best by it.

One of our problems is that more and more of our people are living in the cities and fewer and fewer are on the farm. That gives us more of a problem here. But you are talking to a group that agrees with you.

Ms. GRIM. Well, the land grant system gets into those cities, so it is a good investment.

Mr. WHITTEN. They have all these special programs, but the one that holds them together is the Extension Service.

Ms. GRIM. Right.

Mr. WHITTEN. That locally and nationally works together.

Thank you very much.

Ms. GRIM. Thank you, Mr. Whitten.

[Ms. Grim's prepared statement follows:]

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TESTIMONY

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT,
AGRICULTURE AND RELATED AGENCIES

OF THE

COMMITTEE ON APPROPRIATIONS
U.S. HOUSE OF REPRESENTATIVES

ON BEHALF OF THE

COUNCIL FOR AGRICULTURAL RESEARCH, EXTENSION AND TEACHING

BY

MARY GRIM, CHAIR

MARCH 29, 1990

A voluntary citizens organization cooperating with the National Association of State Universities and Land-Grant Colleges • Division of Agriculture

Mr. Chairman and Members of the Subcommittee, I am pleased to appear before you today and offer testimony in support of the agricultural research and education programs of the land-grant universities which are funded through the USDA budget. My name is Mary Grim. I am a resident of Adams County, Pennsylvania, and I am here today as chair of the Council for Agricultural Research, Extension and Teaching, more commonly known as CARET. CARET is a national grassroots organization of volunteer leaders who are concerned with the agricultural research and education programs conducted by the land-grant universities. As volunteers, we work closely with the deans of agriculture at each land-grant school under the umbrella organization of the National Association of State Universities and Land-Grant Colleges (NASULGC). CARET serves as supporter of, advisor to and friendly critic of the land-grant system.

The land-grant system seeks to improve the quality of life for all citizens of our country. As a user of this system I can assure you that the benefits of the agricultural research and education programs conducted by these institutions do actually reach the American public. The research conducted by these schools is directly related to the needs established at the grassroots level. The extension arm of the land-grant system continues to effectively transfer new technology and information developed by these institutions. In simple but effective language Extension takes this knowledge to the users in terms they can understand and use. The land-grant universities provide key leadership to the American agricultural community as it confronts on-going problems such as pest management, food safety, water quality, drought resistance of plants, and the health and welfare of animals. It also provides an abundance of other unbiased information to the general

public which assists all of us to make better economical, environmental, family and community decisions.

Today, I am here to offer support for the funding recommendations of the NASULGC Division of Agriculture FY91 Budget Committee which represents all facets of the land-grant community. I have attached to my testimony several tables for your consideration which detail these funding recommendations. CARET strongly supports increased funding for the base programs identified as Hatch, Smith-Lever, Evans-Allen, McIntire-Stennis, Animal Health, 1890 Colleges and Tuskegee University, and Morrill-Nelson. These funding mechanisms are critical for this system to survive. They serve as the backbone for all agricultural research and education programs being done by these institutions. As this subcommittee knows, an expanded technological base does not occur overnight. It takes years of detailed experimentation. In many cases the life of a research grant does not provide enough time to bring research projects to full conclusion. The base program dollars provide a continuous source of funding which is so vital to an on-going research effort. We cannot afford to turn the funding faucet on and off if we expect the system to provide the long-range results this country needs.

I would like to highlight other areas to which the land-grant community is giving particular attention. The on-going development of a nucleus of well-trained scientists and professionals in the agricultural arena continues to concern the CARET organization. The Competitive Graduate Training Fellowships Program enables our institutions to produce academically outstanding students who will become this nation's scientists, technicians, educators and entrepreneurs. These fellowships are available throughout the

entire land-grant system. It is also important to add that it is estimated that by the year 2000, 85 percent of persons entering the workplace will be members of minority groups and women. There is a great need, therefore, to train more minority scientists and professionals. The 1890 land-grant institutions and Tuskegee University are major resources of this needed human capital. Consequently, CARET supports any increased funding for these higher education tools.

In addition to areas outlined in the attached tables, the extension component of the land-grant community is seeking funding of $10 million for a National Initiative on Youth at Risk which addresses problems confronting many of our modern youth; to name a few: poverty, drug and alcohol use, teen pregnancy, and welfare dependence. CARET recognizes that Cooperative Extension agents live and work in the community. They are in an excellent position to recognize problems and can quickly respond to these problems with programs which address a community's needs.

A good clean water supply is also critical to the health, welfare and progress of this nation. CARET recognizes that funds have been appropriated by Congress in past years to address these needs. The monies that have been spent by states across this nation to address their diverse problems have greatly helped to turn around disastrous situations. For example, my state's land-grant university, Pennsylvania State University, works through its research specialists and Cooperative Extension agents to teach farmers and homeowners in the Susquehanna River Basin ways to protect the water supply feeding into the Chesapeake Bay. This multi-state effort, which includes Maryland and Virginia, seeks to eliminate by the year 2000 40 percent of the

pollutants entering the Bay. The citizens of these three states are being taught hov to reduce the usage of nitrogen and phosphorous in their agricultural, residential, recreational and industrial areas. We urge you to continue to fund this critical research and education effort.

Recently a report entitled "Investing in Research" called for an infusion of nev dollars into agricultural research in order to "strengthen the agricultural, food, and environmental system." The National Academy of Sciences accurately points out that "in the agricultural system, as with other segments of U.S. industry, the problems of the twenty-first century intensify more quickly than ever before, and opportunities must be seized immediately before their peak of potential benefit has passed." We at the local level have long recognized the need for additional dollars to be spent on agricultural research and education programs. It is imperative that the United States remain a vorld agricultural leader. We as a nation can remain strong and competitive in the vorld market if ve have the tools and information readily available to meet changing demands. In order to do this ve must intensify our efforts immediately. Through the investment of nev monies in agricultural research and education the United States vill be investing in its future. Issues such as nutrition, economics and international trade, production efficiency, natural resources conservation, control of pollutants and others vill be resolved by increased knovledge, improved tools and technologies, and skilled persons to teach the public. CARET supports any infusion of nev monies into agricultural research and education programs.

We do not have the time today to completely review all the successes and needs of the land-grant system. I would, however, like to conclude by simply saying, as a taxpayer, that the Congress is getting a bargain for every dollar it puts into agricultural research and education programs of our land-grant schools. An impressive example of this is that in the state of Mississippi there is a documented $41 return on every federal dollar invested into its land-grant program. This is only one example of 49.

I would like to thank this subcommittee for the support that you have offered in the past and for the fine leadership you give to our land-grant system. With increasing urban populations our nation is moving further away from an understanding of its agricultural base. Our future challenge will be to increase the understanding of food and fiber production among the general public. The land-grant system remains committed to delivering this message to the citizens of the United States.

Again, Mr. Chairman, thank you for the opportunity to appear before you today. CARET looks forward to continuing its work with this subcommittee in furthering American agriculture. I would be happy to answer any questions you may have.

TABLE I: SUMMARY OF FUNDING RECOMMENDATIONS FOR RESEARCH, EXTENSION AND HIGHER EDUCATION
(Thousands of dollars)

	FY 90 Appropriations GRH*	FY 91 Executive Request	FY 91 NASULGC Recommendations
Base Programs			
Research	202,756	197,689	214,921
Extension	265,054	270,627	282,708
Higher Education	2,810	0	2,810
Special Programs			
Research	123,554	132,204	224,441**
Extension	104,126	75,049	133,740
Higher Education	11,111	17,000	21,000
TOTAL	709,411	692,569	879,620

* GRH refers to the Gramm-Rudman-Hollings balanced-budget law.

** Includes $107.5 million of new funding for the National Research Initiative (NRI) for Agriculture, Food and Environment.

TABLE II: RESEARCH FUNDS
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
BASE PROGRAMS			
Hatch Act Base Funds	155,058	158,545	164,361
McIntire-Stennis Act	17,279	12,975	18,316
Evans-Allen Program (1890)	25,012	26,169	26,513
Animal Health (Section 1433)	5,407	0	5,731
TOTAL BASE PROGRAMS, RESEARCH	202,756	197,689	214,921
RESEARCH GRANTS P.L. 89-106			
Competitive Grants (Sec.2b)			
Plant Science	7,751	a	a
Human Nutrition	1,481	a	a
Animal Science	4,937	a	a
Biotechnology	18,775	a	a
Basic Pest Sciences	1,975	a	a
Stratospheric Ozone/Global Change	3,653	a	a
Forestry	3,949	a	a
NRI-Nat'l Resources & Environment	0	15,000	30,000
NRI-Nutrition, Food Quality, and Health	0	5,000	19,000
NRI- Plant Systems	0	50,000	50,000
NRI- Animal Systems	0	30,000[b]	30,000
NRI-Engineering Processes and Value-Added Products	0	0	11,000
NRI-Markets, Trade, and Rural Revitalization	0	0	10,000
Total Competitive Grants	42,521	100,000	150,000

TABLE II: RESEARCH FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
SPECIAL GRANTS (SEC. 2C)			
National Programs			
Acid Precipitation	653	0	692
Animal Health	5,633	0	a
Aquaculture Research General	563	0	a
Integrated Pest Management	2,903	4,000	4,000
Minor Use Animal Drugs	226	329	329
Biological Impact Assessment	123	300	300
Pesticide Clearance	1,975	3,000	3,000
Pesticide Impact Assessment	2,437	2,968	2,968
Rural Development Centers	494	0	524
Tropical and Subtropical Agriculture	3,299	0	3,299
Water Quality and Management	6,615	10,000	10,000
Global Change	0	5,000	5,000
Total Special Grants (2c)	24,921	25,597	30,112
Special Problem Grants[c]	30,907	— 0	30,907
TOTAL RESEARCH GRANTS	98,349	125,597	211,019

TABLE II. RESEARCH FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
OTHER RESEARCH PROGRAMS			
Rangeland (P.L. 95-113)[a]	469	0	a
Aquaculture Centers (P.L. 95-113)[d]	3,703	0	3,703
Supplemental & Alternative Crops (P.L. 95-113)	321	918	918
International Trade Development Centers[d]	3,112	0	3,112
Critical Materials (P.L. 98-284)[e]	5,300	0	0
Low Input Sustainable Agriculture (P.L. 99-198)	4,394	4,450	4,450
TOTAL OTHER RESEARCH PROGRAMS	17,299	5,368	12,183
Federal Administration			
Direct	13,336	12,239	12,239
1890 Capacity Building Grants[f]	(5,430)	(11,000)	(11,000)
NET FEDERAL ADMINISTRATION	7,906	1,239	1,239
TOTAL RESEARCH	326,310	329,893	439,362

[a]Incorporated within the National Initiative for Research on Agriculture, Food and the Environment.

[b]Includes funds transfered from Special Grants for Animal Health. Animal Health formula funds are continued as a seperate item.

[c]Some site specific 2c grants are included in the total for Special Problem Grants which are established to address acute problems in specific states.

[d]Any funding increases should be awarded competitively.

[e]Some items were moved to Supplemental and Alternative crops for FY 91.

[f]See Higher Education, Table IV.

TABLE III: EXTENSION FUNDS
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
BASE PROGRAMS			
Smith-Lever 3b and 3c Base Programs	242,272	246,535	256,808
D.C. Extension	946	1,000	1,000
1890 Colleges & Tuskegee U.	21,836	23,092	24,900
TOTAL BASE PROGRAMS, EXTENSION	265,054	270,627	282,708
NATIONAL EXTENSION INITIATIVES			
Water Quality & Management	5,211	15,500	15,500
Improving Nutrition, Diet & Health			
Food Safety and Quality	0	2,000	5,000
Revitalizing Rural America	0	0	5,000
Competitiveness of American Agriculture			
Sustainable Agriculture	(4,450)[a]	0	2,500[b]
Youth-at-Risk	0	10,000	10,000
TOTAL NATIONAL EXTENSION INITIATIVES	5,211	27,500	38,000

TABLE III: EXTENSION FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
SPECIFIED PROGRAMS[c]			
Expanded Food and Nutr. Ed. Program (EFNEP)	58,197	21,600	58,635
Rural Development Centers	943	0	950
Integrated Pest Management	7,110	7,164	8,250
Pesticide Impact Assessment	2,561	3,580	3,580
Financial Management	1,416	0	0
Urban Gardening	3,474	0	3,500
Farm Safety	963	0	970
Pacific Rim Program	645	0	650
1890 Extension Facilities	9,437	9,508	9,508
Renewable Resources Extension Act	2,744	0	4,000
Farmer Assistance Grants	3,325	0	0
TOTAL SPECIFIED PROGRAMS	90,815	41,852	90,043
Federal Administration, Direct	8,745	5,697	6,347
Pacific Rim Program	(645)[d]	0	(650)[d]
NET FEDERAL ADMINISTRATION	8,100	5,697	5,697
TOTAL EXTENSION	369,180	345,676	416,448

[a]See Low Input Sustainable Agriculture under Research in Table II

[b]New program for Extension only.

[c]Established from time to time to address specific acute problems

[d]See explanation under Specified Programs

TABLE IV. HIGHER EDUCATION FUNDS
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
BASE PROGRAM			
Morrill-Nelson Act	2,810	0	2,810
OTHER PROGRAMS			
Graduate Training Fellowships	2,816	4,000	5,000
Institution Challenge Grants	987	2,000	3,000
1890 Strengthening Grants[a]	1,978	0	0
1890 Capacity Building Grants[b]	5,430	11,000	11,000
Post Doctoral Fellowships	0	0	2,000
Total Other Programs	11,111	17,000	21,000
TOTAL HIGHER EDUCATION	13,921	17,000	23,810

[a]Included in 1890 Capacity Building Grants in 1991 request.

[b]Funded under Federal Administration, Research.

TABLE V: INTERNATIONAL AGRICULTURE PROGRAMS
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
INTERNATIONAL SCIENTIFIC AND TECHNICAL COOPERATION			
Scientific and Technical Exchanges	1,591	1,816	1,900
Administration of International Research	1,415	1,433	1,700
International Organization Affairs	604	612	612
Total	3,610	3,861	4,212
INTERNATIONAL AGRICULTURAL DEVELOPMENT			
Agribusiness Promotion	301	305	305
Institutional Cooperation (ISEC)	99	100	200
PL 480 Support	64	65	65
Cochran Middle Income Fellowship Program	1,473	0	2,000
Total	1,937	470	2,570
OPERATION FAST	494	500	500
FOREIGN CURRENCY RESEARCH PROGRAM	875	0	8,000
Total OICD	6,916	4,831	15,282

THURSDAY, MARCH 29, 1990.

EXTENSION—PUBLIC TELEVISION SERIES

WITNESS

JULIE MOTZ, HUDSON RIVER FILM AND VIDEO

Mr. WHITTEN. Ms. Julie Motz?

We are glad to have you before the committee.

Ms. MOTZ. Thank you. I am very glad to be here.

Mr. Chairman, I am Julie Motz, Executive Producer of the Hudson River Film and Video Company. I have a prepared statement which I would like to have entered in full on the record and which I will summarize here.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

Ms. MOTZ. I would like to begin by thanking this committee for its support for our two documentaries for public television about American agriculture.

Last week Colleen Dewhurst recorded the narration for the first of these entitled Farming America. Our filming for the program took us to 20 States where we interviewed many wonderful and inspiring people through whose lives the story of American agriculture will be told. Cassettes of the finished film will be available for committee members at the beginning of June, and we would like to screen a work print for the committee in the beginning of May.

The second film on the history of American agriculture will be completed this fall. We have had discussions with the Public Broadcasting Service, and they have told us they would like to show both programs nationally this year.

The purpose of these films is to stimulate public discussion on the issues involved in the 1990 Farm Bill and to make both rural and urban Americans keenly aware of the vital importance of farmers and the farm economy on all our lives.

As we travelled across the continent documenting the problems of America's farmers there were other problems which kept intruding upon our awareness. These were the problems of America's troubled youth as desperate in rural counties as in urban cities and a constant haunting theme on the evening news. It was clear wherever we went that no part of this country was safe from the disease of drugs and the crime, despair, and destruction of young lives which it carries with it.

We decided that our next film project would have to bring us face to face with this issue. We began to ask now why do so many young people take drugs and commit crimes, but why don't we? What is it about our lives that makes those choices so unacceptable to us?

We began to wonder just what our society would have to give those disaffected and despairing young people to make them feel as excited about their lives and about life in America today as we were. What is it that would give them the mobility that we accept as our birthright—the freedom to work at something meaningful to them and valued by others? What is the true passport to a socially

productive life in this country? And what are the consequences of not supplying that to them?

The answer to this last question unfortunately is all too apparent and all around us. Our prisons are exploding, and more cannot be built quickly enough—especially with the growing number of repeat offenders—to hold all who could be legally put there. Our streets and our lives are no safer, and our young people no less terrified and terrifying, both to themselves and to others.

I am here to request an appropriation of $600,000 in the budget of the Cooperative Extension Service to initiative a two-part series for national public television which would explore these questions and open the minds of the American public to a creative examination of the plight of our isolated, desperate, and endangered youth.

The Extension Service has had, from its inception, a mandate for youth development and education and, along with 4H, is already doing excellent outreach work in this area. With programs such as Tackling Tough Stuff, they are working with land grant university faculties to reverse some of the most negative trends in adolescent thought and action.

Our films will look at the whole history of the education and rehabilitation of substance addicted and criminal youth and explore the concept of making education administered by our best institutions of higher learning the primary focus of all treatment or incarceration.

There was a time in our nation's not-so-distant past when we seemed on the brink of destroying the bounty of this land and the people who nurture that bounty, which is the true basis of all our wealth. So today we are perilously close to losing an entire generation of young citizens to drugs and crime. Even as we approach the brink of this new disaster, however, there is still time to turn the most creative resources we have to recapturing their hearts and stimulating and educating their minds. I hope that the committee will allow us the opportunity to start moving the American public in this direction.

In closing, I would like to thank you all again for your support for our work and for all the information and guidance which you and your staffs have given us. The American farmer is very lucky to have such dedicated, energetic, intelligent, and creative people working on his behalf, and we are all lucky to have you safeguarding the interests of this nation and all of its people.

Thank you.

Mr. WHITTEN. Thank you very much. As you know, we have a great interest in the 4H clubs. As I have pointed out in the past, this committee is interested to see 4H type work in our cities.

I was district attorney before coming here, and I am proud to say I don't recall ever having trouble with anybody with an active background in 4H. I could say the same thing for Future Farmers of America. It is a wonderful work. But I wonder, if we come out with a program here having to do with drugs and sort of wrap it around the 4H club, if we aren't doing them an injustice. That is not where the problem is.

As I said earlier this year, we provide $75 million and call on the Administration where we have these vacated facilities from the military to put it into CC-type operations like we did years and

years ago where they could work in reforestation and all these other things.

I have some serious questions about whether tying the two together wouldn't give the public the wrong impression.

Now, this year we had a lot of folks wanting a whole lot of money to check on food, but they had no evidence there was any danger at all. We got the Delaney Amendment, which is the law, that you have to have zero tolerance—and there is no such thing.

So to come out with a whole lot of money would look like there is some problem in the food, and yet they haven't shown any evidence of any problem with food at all.

What we did was adjourn the committee and asked them to go make some tests and come back and tell us what it showed.

I would be fearful to tie a drug thing to 4H where they don't have the problem.

Ms. MOTZ. I would really like to address that. First of all, I think the concept of going back to the Civilian Conservation Corps in some form or the other is an excellent one. One of the things our films will do is look at all kinds of alternatives so the public can begin thinking in these terms.

But I also wanted to say that 4H is already doing outreach work with its population, with the youth-at-risk population. It is doing a wonderful, wonderful job, and they have been reaching, both in rural and in urban areas, to do this. So we are really trying to be supportive of what they are doing, not to drag them into something new.

Mr. WHITTEN. I am sure you are aware of some of the financial problems the committee has. There is too little cake to divide, as it is. But 4H is a wonderful work.

You might, if you wish to, give us the benefit of your theme and what you expect to do, because we certainly don't want to look like there is any tie with drugs and drug problems and 4H. It has got too wonderful a record.

Ms. MOTZ. No. The thrust of what we are talking about is really examining the power of education to turn around young lives. What we were thinking of is looking at a concept of having land grant universities design and administer education to people who are incarcerated for drugs and drug-related crimes—in other words, to say to them, "If you had to education this population"—and to say to 4H, "If you had to turn this population on to your principles how would you do that?" Let them explore that, and then do a film about that possibility so that the public will begin to see the power they have.

Mr. WHITTEN. I don't question your good intent; I just wonder about your planning.

Ms. MOTZ. Well, of course, we would like your help with it, Mr. Chairman.

Mr. WHITTEN. Thank you very much.

[Ms. Matz's prepared report follows:]

HUDSON RIVER FILM AND VIDEO

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STATEMENT OF JULIE MOTZ, EXECUTIVE PRODUCER,

HUDSON RIVER FILM AND VIDEO COMPANY

BEFORE THE HOUSE APPROPRIATIONS SUBCOMMITTEE

ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

MIKE & SONJA GILLIGAN / CHUCK & MICHELLE CLIFTON / JULIE MOTZ

FARMING AMERICA

Mr. Chairman and members of the Committee, I am Julie Motz, Executive Producer for the Hudson River Film and Video Company, and I am delighted to have the opportunity to appear before you once more. The quality of information which the people who sit on this committee possess, and your attentiveness to the concerns of American agriculture - our largest and most important industry- make testifying here an education for the witnesses as well as the Committee members.

For the past two years I have appeared before you to request an appropriation for two public television documentaries about American agriculture. I am happy to report that, thanks to the wisdom of this committee, the first of these - entitled **FARMING AMERICA** - is now being completed. We have received a commitment from Colleen Dewhurst to do the narration, and will bo able to screen a workprint of the film for the Committee in the beginning of May. Cassettes of the finished film will be available for Committee members in June.

The second film will be completed this coming fall. We have had preliminary discussions with PBS about air time, and they have told us that they would like to present both programs to the American public this year. We hope that this will both stimulate public interest in the discussion surrouding the 1990 Farm Bill and sensitize both rural and urban Americans to the critical importance of farmers and the farm economy in all our lives.

As we travelled around the country looking at American agriculture, and devising ways to document it, in all its overwhelming richness, stunning variety, and staggering complexity, we were both heartened and saddened. We were heartened by the people we met - people of tremendous faith, good will and resourcefulness. It was encouraging to realize that those upon whom we as a nation depend for that food which is our very life were so committed to <u>their</u> lives and to their way of life.

It was saddening to realize, as Mr. Whitten has pointed out, that farm policies have set us going in a direction where there are fewer and fewer of those people, and that their lives, which are so precious to our own survival, are becoming more and more difficult. Our feelings of hope did, however, ultimately triumph. Our research and our travels convinced us that the human and natural resources which have fueled the successes of American agriculture in the past have not been hopelessly squandered, and that there is both the will and the intelligence on the part of the American farmer to be a wise keeper of the land and a bountiful provider of food and clothing to America and the world.

YOUTH AT RISK

In addition to the problems of the farmer, there were other problems which intruded upon our consciousness as we journeyed across the continent. These were the problems of our nation's youth - as desperate in rural areas as in urban centers, and a constant theme on the evening news. It became ever more clear to us that no corner of America was safe from the scourge of drugs, and the crime, despair and destruction of our young people which drug-taking invariably engenders and accompanies.

We decided when our filming was completed last fall that our next film project would have to address this issue - that it was simply too important for us to ignore. We began to ask ourselves not, "why do so many young people take drugs and commit crimes?," but rather "why don't we?" What is it about our lives that makes those options unacceptable to us?

While we might certainly like to imagine that it is our superior moral fibre and our high ethical standards that account for this difference, the truth is that we had to admit that we all had criminal and even murderous impulses at times and, at times, a strong desire to escape from reality. We decided that what kept us from both drugs and criminal activity was not the fact that we were so very "good," but the fact that we had so many other choices in our lives.

As members of the educated middle class, we had been able to learn to use our minds to both distract ourselves from painful realities in socially acceptable ways (literature, music, art and conversation) and to create the kind of reality we preferred. We used our minds to get us the kind of work we wanted, and to do that work in an efficient and enjoyable way. It became clear to us, the more we thought about it, that we were not born with these abilities - we were carefully taught them by our parents and our schools.

We then began to ask, what would we, as a society, have to give those desperate young people, to make them feel as glad to be alive and part of life in America today as we are? What would truly give them the mobility that we accept as our birthright - the freedom to work at something meaningful to themselves and valued by others? What is the true passport into socially productive life in this country? And what are the consequences of not supplying that to them?

The answer to the last of these questions is, unfortunately, all too apparent and all around us. Our prisons and juvenile detention centers are exploding, and more cannot be built quickly enough, especially with current recidivism rates, to hold all

who could be legally sent there. Our streets are no safer, ou lives and our property no more secure, and our young people no less frightened and frightening, both to themselves and others.

We suspect, both from our own experience and the reading and interviewing we have done, that the answer to the first two questions is "a first-rate education." Traditionally, education has been the great inclusionary and democratizing force in this country. It has turned millions of immigrants into Americans, and swept millions of people up from the struggle and despair of poverty into the hope and freedom of the middle class. It is probably the reason that America has had so large a middle class, and so little hierarchy and restrictiveness in its social structures.

What would happen if some of the top educational institutions in this country - led by our land grant universities - became deeply involved in the education of our troubled, drug-addicted and criminal youth? Given that the recidivism rate among those who get their bachelor's degrees while incarcerated is 2% (compared with an overall average of 80%), what would happen if America's finest institutions of higher learning devoted their resources to reaching and reclaiming this population? What would happen if we could create prisons that would actually function as universities?

I am here to ask for an appropriation of $600,000 that would enable us to initiate a two-part documentary series for national public television that would explore these questions, and open the minds of the American public to a creative examination of the plight of our isolated and disaffected young people. Given the mandate of the Extension Service to promote youth development, and the excellent outreach work already being done by both 4-H and Extension in this area, it seems a most appropriate project to be executed under their aegis.

Extension already has an excellent history of reaching beyond its traditional rural constituency with such programs as Urban Gardening and food and nutrition education in our inner cities. With programs such as Tackling Tough Stuff, they are working with land grant university faculties to turn around the most negative trends in adolescent thought and action. Our films will look at the whole history of the education and rehabilitation of substance-addicted and criminal youth, and explore the concept of making education, administered by our best institutions of higher learning, the primary focus of all treatment and incarceration.

We all know that the youth of this country are its future and that, if current trends continue, that future is decidedly grim. They are a resource as precious as our land, our water and the air we breathe. Just as we have as a nation slowly and painfully

come to the realization that the environment must be saved - and that we can do it - so we must also come to realize that saving these young lives is both necessary and within our grasp.

Just as we have come perilously close to wasting the bounty of this land and the people who nurture that bounty which is the true basis of all our wealth, so we are coming close to losing an entire generation of future citizens to drugs and crime. Time is running out, but it is still not too late to turn the most creative resources we have to recapturing their hearts and stimulating and educating their minds. I hope that the Committee will allow us the opportunity to start moving the American public towards a realization of this.

In closing, I would like to thank you all again for your support for our work, and for the tremendous amount of information which you and your staffs have made available to us. The American farmer is very lucky to have such uniquely dedicated and wonderfully creative people working on his behalf, and we are all lucky to have you safeguarding the interests of the nation and of all its people.

THURSDAY, MARCH 29, 1990.

SEWING AS A BUSINESS

WITNESSES

MORRIS JARVIS, AMERICAN HOME SEWING ASSOCIATION
JOHN CHWAT, AMERICAN HOME SEWING ASSOCIATION

Mr. WHITTEN. Next is Morris Jarvis.

We are glad to have you, sir.

Mr. JARVIS. Thank you. I am glad to be here.

Mr. Chairman and members of the subcommittee, I am Morris Jarvis, President of Hancock Fabrics, Inc., of Tupelo, Mississippi, and also Chairman of the Government Relations Committee of the American Home Sewing and Craft Association. I am accompanied today by John Chwat, our Association's Washington representative.

Mr. Chairman, in prior years our home sewing industry has testified before your subcommittee seeking support for what we believe is a program that the American people, the U.S. Department of Agriculture, and the Congress can be proud to support.

This pilot project in Mississippi, which we initiated and worked cooperatively with the Extension Service, is entitled Sewing as a Business. This program is profitable for the people who sign up to take it, and it is totally supported by the industry. In fact, the industry contributed approximately $80,000 to that program's success last year.

It results in increased incomes for the participants and generates Federal and State revenues, both.

We urge the subcommittee to dedicate funds in the amount of $180,000 for our rural business opportunity development clothing and textile project, patterned after the 1988 Mississippi project and the USDA's Extension Service Federal administration and coordination portion of the fiscal year 1991 Extension Service budget. This figure is based on the experiences of running the 1988 Mississippi project. These funds should be dedicated in equal amounts for projects in Mississippi, South Carolina, and Alabama.

The American Home Sewing Association specifically requests that this $180,000 be inserted as a dollar line-item project under the Federal administration and coordination category.

We believe that with your support this project has the capability of becoming a popular self-paying and revenue-generating USDA program appealing to citizens across the country. It is an extremely modest amount for the Congress to support but we will guarantee a strong return on investment in the form of income generation and tax payments.

I have a handbook, Mr. Chairman, that I would like to deliver to you that shows this is a live and a viable program that we have got.

I thank you for your consideration.

Mr. WHITTEN. Thank you very much. We appreciate your appearance.

Mr. JARVIS. Thank you.

[Mr. Jarvis' prepared statement follows:]

STATEMENT OF

MORRIS JARVIS, PRESIDENT

HANCOCK FABRICS, INC.

BEFORE THE

HOUSE APPROPRIATIONS SUBCOMMITTEE ON

AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES

MARCH 29, 1990

Mr. Chairman and Members of the Subcommittee, I am Morris Jarvis, President, Hancock Fabrics, Inc., Tupelo, Mississippi, and Chairman of the Government Relations Committee of the American Home Sewing Association. I am submitting this Statement to you today on behalf of the corporate and retail members of the association regarding the U.S. Department of Agriculture's Extension Service, Fiscal Year 1991 funding request.

Our association is the only organization which represents the entire home sewing industry in the United States, including such areas as fabrics, fibers, patterns, notions, trimmings, sewing machine manufacturing, retailing, wholesaling and publishing.

Mr. Chairman, our industry works cooperatively with the USDA's Extension Service, and their clothing and textile specialists on sewing education programs serving hundreds of thousands of citizens around the country. These Extension Service education programs are critical to the sewing and textile industries.

While clothing and textiles represent a modest portion of the existing Extension Service education programs, clothing is a basic necessity of life, and therefore, sewing and clothing - relating programs take on an economic importance to our society that far exceeds that of other desirable but less fundamental programs. Sewing skills enable people to lower their expenses for clothing and to obtain income through utilization of their sewing skills by performing part-or full-time sewing related work. People do not need extensive facilities or equipment to make clothes.

Mr. Chairman, last year in testimony before this subcommittee our association detailed a unique private-public sector program we initiated with the cooperation of the USDA's Extension Service, entitled "Sewing As A Business". At that time we supported a sewing education program designed to assist the sewing entrepreneur in establishing a profitable home-based business. We targeted the State of Mississippi for the Pilot Project because of its low per capita income and unemployment rate. I am proud to say that the project entitled, "Mississippi Pilot Project in Textiles and Clothing Entrepreneurship" was a resounding success. During 1988 the six workshops around the state included 123 attendees. Well over 500 Mississippians applied to attend the pilot project. The response was overwhelming.

As a bottom line, Mr. Chairman, the Mississippi Extension Service Project increased the incomes of its participants. The

following list of five participants illustrates the rise in their incomes after attending and graduating from the workshop.

Irma May	Before - $500-999 After - $7,000-9999
Connie Richardson-Russell	Before - $500-999 After - $6,000-7999
Bob Gibson	Before - $1,000-2999 After - $10,000-14999
Fran Sexton	Before - $1,000-2999 After - $20,000-24,999
Hattie McKenzie	Before - Under $500 After - $5,000-6999

This type of project is not new to the Extension Service. In fact, in 1983 and 1984 nearly 1,000 Alabamians attended five county and 16 Sew For Pay area meetings. I understand that over 1,500 people in Alabama receive a monthly newsletter entitled, "Sew-For-Pay". In 1986, the Massachusetts Extension Service sponsored a highly successful "Sewing as a Business" conference. The Extension Services of Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Ohio and South Dakota have sponsored a highly popular book entitled, "Sewing for Profit" which has sold over 55,000 copies.

Mr. Chairman, the AHSA believes that this Mississippi project revitalizes rural America in one simply way -- it assists rural families to survive in this economic environment by increasing their income. It also provides hard-sought tax revenues for state and federal governments; increasing farm-family income is a positive goal that the AHSA and the USDA wholeheartedly support.

The AHSA requests that the Pilot Project in Mississippi be continued and expanded to South Carolina and Alabama in Fiscal Year 1991. Both states have indicated an interest in starting the program, but lack the resources to do so.

We urge the Subcommittee to dedicate funds in the amount of $180,000 for a "Rural Business Opportunity Development Clothing and Textile Project," patterned after the 1988 Mississippi Project, in the USDA's, Extension Service "Federal Administration and Coordination" portion of the Fiscal Year 1991 Extension Service Budget. This figure is based on the experiences of running the 1988 Mississippi Project. These funds should be dedicated in equal amounts for projects in Mississippi, South Carolina and Alabama. The AHSA specifically, requests that this $180,000 be inserted as a dollar, line-item project under the Federal Administration and Coordination category.

Last year, the Senate Appropriations Committee inserted the following Report language under the "Federal Administration and Coordination," portion of the Fiscal Year 1990 Extension Budget (p. 18-19, Sen. Report 101-8/1):

> "The Committee concurs with the House in recommending continuation of the Home Sewing Project in Mississippi and expansion of this project to South Carolina and Alabama. Up to $180,000 is included for these projects."

The AHSA fully supported this Senate Report language. Unfortunately, Mr. Chairman, in trying to work with Extension officials to implement this directive, our industry is still unable to confirm that each of these states have received their

$60,000 appropriations. Extension officials said there was no "line-item" appropriation and that even if the money was included in the 1989 Public Law 101-161, it might have been "absorbed" for other purposes. We are working with the Congress to see that these funds are made available to keep this Program functioning.

In short, Mr. Chairman, we believe that this particular program is important to continue in Fiscal Year 1991 and is supported by state extension officials in Mississippi, Alabama and South Carolina as well as the citizens who benefit by attending these projects. It is an extremely modest amount to invest in a project which generates federal and states revenues.

The AHSA appreciates this opportunity to testify once again before this subcommittee. We hope you can support our request.

THURSDAY, MARCH 29, 1990.

AGRICULTURE SCIENCE AND EDUCATION

WITNESS

DR. ROGER L. MITCHELL & PANEL, NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES

Mr. WHITTEN. Next we will hear from Doctor Roger Mitchell.

Dr. MITCHELL. Thank you, Mr. Chairman. Good afternoon. It is nice to see you and to share with you.

I am Roger Mitchell. I work as Dean of the College of Agriculture and Director of the Agricultural Experiment Station at the University of Missouri, Columbia.

It is my honor today to represent the 1991 Budget Committee of the Division of Agriculture of State Universities Land Grant Colleges. Several of my colleagues are seated here sharing with me. We are very proud, as we know you are, of this research and Extension higher-education system of the 1862 and 1890 land grant institutions.

The recommendations that we offer today are following rather extensive consultation with consumers and users of the information, with government agencies, and throughout the land grant community. We believe that we have very broad national consensus on the priorities and funding proposals that we present.

We are proud to represent the science and education portion of American agriculture which you and your colleagues have been so very supportive of over the years.

I feel that we do face two major challenges—and new challenges—at this time. First, other countries our outstripping the United States in their investment in agricultural science. Secondly, our consumers are asking—as several have alluded to already today—that we give increased attention to environmental quality.

These pressures and a competitive global agricultural economy call for a reversal of this rather long-term erosion of the terms that are going into agricultural science in the United States, so we offer three very heavily inter-dependent priority categories for your consideration.

First—and it has been spoken to eloquently already today—to strengthen our base or our formula fund efforts. We are proposing for Hatch and Smith-Lever and the related programs that we have just over a 6 percent annual increase—a strong increase, in one sense, given the budget challenges, but a very important one, to keep that foundation that has been addressed already today sound and going well.

As you know, these Federal funds get multiplied many times as we get out into the States and they are leveraged there.

The second part—and we consider it very much interdependent with the first—is to expand, with some very unique new features—new features I would like to underline—relative to competitive research grants. The Board on Agriculture proposed in the national research initiative a $500 million idea. We are very grateful that the President has recognized this proposal in his Executive budget.

We are requesting $150 million allocation, which does include the $42.5 million that is presently in this line.

It is very important for me to underline some new features of this request. We believe it is much more broadly-based than the competitive grants that we have thought about in the past.

First of all, there is a major element of applied research.

Secondly, we are going to focus on multi-disciplinary problem solving efforts. These will be, indeed, carefully reported annual through our standard agricultural experiment station proposals.

Third, there are strengthening grants to assist institutions that are not as competitive at the present time and to increase their competitive capacity. So we have worked very hard to weave this into the total land grant system as we have planned this particular grant approach.

This enhanced grants program we believe is one that can and will complement our base formula-funded activities, but it, of course, must not be at the expense of those base-funded efforts.

You will also note there are some special research grant requests of national importance—themes that have already been addressed today in water quality, pesticide clearance as IR-4 was just referenced, integrated pest management, global change, and rural development. Each of these gets attention.

The third focus of our proposal in this inter-dependent package undertakes new initiatives in Extension and higher education. The special Extension initiatives in the President's budget are water quality, food safety, and youth at risk. I would report, as we have just heard the very fascinating report already, there is enormous groundswell across both rural and urban America for this $10 million initiative to work with these youngsters that do seem to be at unique and different risk.

There are two additional initiatives that we request: rural development and sustainable agriculture in Extension. And, of course, we would underline that the FNET program has been a wonderfully productive one over the years and we aspire to see that program continued in its funding.

In higher education, the 1890 and Tuskegee capacity building grants are one very key feature. Secondly, graduate and post-doctoral education to increase the number of high-quality scientists that will be available in the future both to work in the classroom and at the research laboratory and in the field and transferring the technology as we have been thinking about it this afternoon. Finally, institution challenge grants for the 1862 institutions to stimulate curricular change and faculty development there.

We do believe these proposals effectively address that critical dimension of educating students both on and off the campus—resident instruction and Extension, if you will.

The written testimony that we have previously provided you reiterates our research, Extension, and higher education goals in more detail. We do see that these three—base program funding of formula funds, increased competitive research grants, and special Extension and higher education initiatives—can fit together to carry out our land grant mission effectively in an inter-dependent manner.

We certainly do appreciate your past support.

Mr. WHITTEN. I have a question.

Dr. MITCHELL. Yes, sir.

Mr. WHITTEN. What are we going to do about agriculture? You are in this field. You come here and want us to take money away from other things and give it to competitive grants where we have no control about what they use it for, with no report as to how they use it.

I don't know whether you were here, but I pointed out that we had a check on this and all of the schools charged more than 50 percent of their money to overhead. Two or three put it in the pot for administrative funds.

We are here on this side where each land grant college is having fewer and fewer of their people in agriculture. For 48 years we had it where the fellow producing basic commodities could look to the buyer so as to offset minimum wages and so forth, but nobody says anything about it now. The producer has got a support price below cost, and then gets a check from the government. We spend $4 billion exporting, which goes to the exporter and is charged to the farmer. We spend $2 billion to promote some of our domestic fruit, other juices and what not. What are we going to do to look after the farmers?

It is true that you have got this in the budget, but it is at the expense of existing programs. It is $100 million taken away from agriculture. In the Department they raised all their things for supervision at the expense of the folks out in the field. Is there any way for us to help agriculture and the farmer?

Dr. MITCHELL. My experience as a director of an agricultural experiment station is that I have found that I can blend competitive grants, check-off funds from the several commodity groups——

Mr. WHITTEN. Well, how are you going to satisfy Congress when you don't have to report to us? I'm talking about competitive grants now.

Dr. MITCHELL. Yes, sir. I——

Mr. WHITTEN. A special grant is the same thing except we have some say so, and you have to report to us and show we are getting our money's worth.

Dr. MITCHELL. Yes, sir.

Mr. WHITTEN. All of them want to get out from under that. I will tell you another thing: the first time I came here when I first got on this subcommittee a fellow from Mississippi State—my State—named Dorman—D-O-R-M-A-N—a good friend of mine, came to me wanting to get some extra money for the experiment station. I said I didn't know what I could do, but I asked him what he wanted it for. He said, "If you are going to tell us what to do with it we don't want it." That happened.

Dr. MITCHELL. Yes, sir. I believe though that we do now, and——

Mr. WHITTEN. The record doesn't support what you believe.

Dr. MITCHELL. Through the Cooperative State Research Service our scientists report their competitive grants right along with their——

Mr. WHITTEN. Right now we have a request here to build a building in agriculture for the use of other activities on the campus. We have land grant colleges where they elect a new president and don't ask him a thing about agriculture or anything related.

Dr. MITCHELL. We do think that we have a plan here where we will report to you, sir, and you will——

Mr. WHITTEN. I am asking for your help. What can we do to correct that situation?

Dr. MITCHELL. We know that it has been a challenge in terms of the formula or the base funds, and we have seen that those——

Mr. WHITTEN. Over 300,000 farmers went broke.

Dr. MITCHELL. Yes, sir.

Mr. WHITTEN. And 70 million acres are lying idle. The world is begging for food and we've got a program here where we are paying our people not to produce when the world is begging for food. What can you do to correct that?

Dr. MITCHELL. At the Missouri station about 40 percent of our funds now come from competitive grants. If I didn't have that 40 percent, what the State provides——

Mr. WHITTEN. If we had special grants we could see we get more results.

Dr. MITCHELL. And we appreciate the special grants that come. Yes, sir.

Mr. WHITTEN. Why do you put it over into competitive?

Dr. MITCHELL. I think the way——

Mr. WHITTEN. What is it against special?

Dr. MITCHELL. Not against—I blend them all together. I need to manage that whole system.

Mr. WHITTEN. You just said you had 40 percent over here where we have nothing to do with it.

Dr. MITCHELL. Yes, sir.

Mr. WHITTEN. That is what I understood you to say.

Dr. MITCHELL. Yes, sir. When those from NSF——

Mr. WHITTEN. Why do you want to put it in competitive grants where nobody has any supervision or not report it?

Dr. MITCHELL. We found that we have to go and compete in NSF and NIH and those areas, and I think it is an exciting opportunity for agriculture to have some of those kinds of funds that we will, indeed, keep the American farmer more competitive if we have a blend.

Mr. WHITTEN. You mean the farmers who are left.

Dr. MITCHELL. Yes, sir. I am sad that——

Mr. WHITTEN. Over 300,000 went broke.

Dr. MITCHELL. Yes, sir. We lose them. But there are economic forces that go beyond even what we can provide.

Mr. WHITTEN. Is it economic forces or government policy?

Dr. MITCHELL. A lot of government policy. Yes, sir.

Mr. WHITTEN. Thank you very much.

Dr. MITCHELL. Thank you. Nice to be with you.

Statement of

Kenneth R. Farrell
Chairman, 1991 Budget Committee
Division of Agriculture
National Association of State Universities and
Land-Grant Colleges

Before

Rural Development, Agriculture, and Related Agencies
Subcommittee on Appropriations

House of Representatives
Congress of the United States

March 29, 1990

Mr. Chairman, I am Kenneth R. Farrell, Vice President, Agriculture and Natural Resources, University of California. I appreciate this opportunity to appear before your Committee as Chairman of the 1991 Budget Committee, Division of Agriculture of the National Association of State Universities and Land-Grant Colleges, and to present our recommendations for fiscal year 1991 federal funding for agricultural research, extension, and higher education at land-grant universities.

Our funding recommendations have been established through an extensive, continuing process of consultation within the land-grant community, with governmental agencies and advisory groups, and with consumer and user organizations at state and local levels throughout the country. Thus, our recommendations represent a broad, national consensus on priorities and funding needed in fiscal year 1991.

THE SETTING OF AGRICULTURAL SCIENCE AND EDUCATION

American agriculture remains one of the most technologically advanced, efficient production systems in the world. Productivity, as conventionally measured, has advanced steadily throughout the post-World War II era. Agriculture has achieved this enviable position in major part as a result of three factors: 1) public and private investment in scientific research and development; 2) effective mechanisms for transfer of technology to managers operating in a competitive market environment; and 3) steady advances in the managerial skills of agricultural operators as a result of public investments in education.

In part because of the very successes of agriculture and the consequent abundance of relatively low cost of food and fiber in this country, continued productivity advances and agriculture's competitiveness in global markets are too frequently taken for granted. This attitude of complacency, if continued, could have serious long-term consequences for American agriculture and rural America.

It is well known that agricultural productivity gains in many other countries, particularly in the market-oriented industrialized and newly industrialized countries, have equaled or exceeded those in the United States in recent years. It is also well known that in many of these countries investments in agricultural R&D approach or exceed those of the United States relative to the size or value of agricultural production. The once-dominant position of the U.S. agricultural science establishment has eroded whether measured by R&D investment, by scientist years employed, or by scientific value of research output.

Coupled with these changes in the global setting of agriculture and agricultural science, the domestic setting of U.S. agriculture has been undergoing fundamental change in recent years. I refer here to the competitive pressure on natural resources used by agriculture. I refer particularly to public goals to maintain or enhance quality of the natural environment and to reduce risks to humans and other species from the presence of toxic material in the food supply and elsewhere in the environment.

Briefly stated, we have entered an era in which agriculture and agricultural productivity are to be assessed not just by physical input-output or traditional market values, but also by the environmental and natural resource consequences and costs of agricultural production.

Mr. Chairman, it is my judgment that if we are to deal successfully with this twin set of forces--more intensive competition in world markets and development of economically feasible, more environmentally and natural resource-sensitive production systems--we must reverse soon the long-term erosion of agricultural science in the United States. To do so will require major new investments in science and education in the years immediately ahead.

RECOMMENDATIONS FOR FISCAL YEAR 1991

The committee recommendations for 1991 total $879.6 million for research, extension, and higher education, a 24 percent increase over the Gramm-Rudman-Hollings Appropriations of FY 1990. Our recommendations include $107.5 million of additional funding for a National Research Initiative for Agriculture, Food and Environment--about two-thirds of the total increase. Excluding the National Research Initiative, the recommendations amount to an increase of 8.9 percent over 1990.

The proposed increases in funding involve three equally important, interdependent priority purposes:

1. Strengthen Base Programs for Research, Extension, and Higher Education

An increase of 6.0 percent in base funds for research and 6.7 percent in base funds for extension are needed to offset anticipated inflation in Fiscal Year 1991 and to begin reparation of the near 20 percent decline in real funding levels of the past 10 years. In addition, the 1991 Budget Committee recommends continued funding of the Morrill-Nelson Act to support higher education.

The erosion of base funds in the past decade has impaired the ability of the system to meet future critical state and national research and extension needs. Major redirection of these funds to address critical issues already has occurred at most land-grant universities. Costs of conducting science-based research and extension have escalated dramatically and will continue to do so in the immediate future.

Reversal of the erosion in base funding is essential if we are to maintain the basic infrastructure for research and extension. Without improvements in that infrastructure, the system will be unable to sustain core research and extension capabilities built over the past several decades. Without the flexibility provided by inflation-adjusted federal base funds and the substantial leveraging (three- to five-fold) of state funds which

accompanies base funds, the quantity, quality, and responsiveness of research and extension programs will deteriorate steadily in the years ahead. The system is stretched far too thinly at prevailing levels of base funding to meet the expectations of those depending upon its programs.

2. Expand Competitive Research Grants

In its recent report "Investing in Research--A Proposal to Strengthen the Agricultural, Food, and Environmental System", the Board on Agriculture of the National Research Council proposed the creation of a competitive grants program funded at $500 million annually. In support of such a program, the President's Fiscal Year 1991 budget proposes a National Research Initiative (NRI) of $100 million in 1991. Included in the $100 million are $42.5 million of current competitive grant funds.

The NASULGC 1991 Budget Committee fully supports and endorses the need for and principles of an expanded competitive grants program of the type proposed in the NRI. However, the Committee supports an expansion of competitive grants only on the basis that such an expansion not come at the expense of currently funded programs, particularly base funds. An enhanced competitive grants program is a complement to, not a substitute for, enhanced funding of base and other programs.

The President's budget requests funding in 1991 for four of the six component areas of the NRI: Natural Resources and Environment; Nutrition, Food Quality and Health; Plant Systems; and Animal Systems. The 1991 Budget Committee strongly recommends funding of all six components of the National Research Initiative in Fiscal Year 1991, adding the areas of Markets, Trade, and Rural Revitalization, and Engineering Processes and Value-Added Products. In addition, increased initial funding is recommended for Natural Resources and Environment and for Nutrition, Food Quality and Health relative to the Administration's proposal.

The Committee recommends funding of the National Research Initiative at $150 million in Fiscal Year 1991 with the caveats noted above. In addition, we are requesting additional funding for special research grants related to water quality and management, pesticides and integrated pest management, and global change.

3. Undertake Vital New Initiatives in Extension and Higher Education

A unique and highly valuable characteristic of land-grant universities is the tradition of close linkage and interdependencies among research, extension, and resident instruction. Research enriches resident instruction; the linkage between research and extension promotes the adaptation, application, and transfer of research-based information to meet the needs of private and public sector managers in local communities throughout the country.

The NASULGC 1991 Budget Committee recommends funding of several nationwide and special extension programs, particularly in water quality and management, rural development, sustainable agriculture, integrated pest management, youth-at-risk, and management of natural resources. The Committee also recommends a further increase in funding for higher education including capacity building and strengthening grants for the 1890 institutions and Tuskegee University, graduate training and postdoctoral fellowships in the agricultural sciences, and institution challenge grants.

The Committee emphasizes that these three components recommended for increased funding in Fiscal Year 1991 are integral, interdependent parts of the needs of the land-grant system. Each component is of major significance and importance in its own right; each component complements and is interdependent with the other two. Base funds support all three areas; the recommendations are presented as an interdependent whole.

FUNDING OF PROGRAM PRIORITIES

Mr. Chairman, the tables which follow provide you with an overview of the 1991 Budget Committee recommendations in program terms, including research, extension, and higher education. Data are in millions of dollars with numbers in parentheses being FY '90 Gramm-Rudman-Hollings appropriations.

PRESERVING NATURAL RESOURCES AND PROTECTING THE ENVIRONMENT		
Competitive Research Grants (NRI)	30.0 M	(7.7 M)
Special Research Grants (Sec. 2c):		
Water Quality and Management	10.0 M	(6.6 M)
National Extension Initiative: Water		
Quality and Management	15.5 M	(5.2 M)
Special Research Grants (Sec. 2c):		
Pesticides/Biocontrol/Integrated		
Pest Management (IPM)	10.3 M	(7.4 M)
Specified Extension Programs: IPM/Pesticides	11.8 M	(9.6 M)
Special Research Grants (Sec. 2c): Global Change	5.0 M	(0)
Renewable Resources Extension Act	4.0 M	(2.7 M)
Other Research Programs: Low Input Sustainable		
Agriculture (LISA)	4.4 M	(4.4 M)
Extension Program: Sustainable Agriculture	2.5 M	(0)
Special Research Grants (Sec. 2c): Acid Precipitation	0.7 M	(0.7 M)
ENHANCING NUTRITION, FOOD QUALITY AND HEALTH		
Competitive Grants (NRI)	19.0 M	(1.5 M)
Expanded Food and Nutrition Education Program (EFNEP)	58.6 M	(58.2 M)
Extension Program: Food Safety/Quality	5.0 M	(0)
Specified Extension Program: Urban Gardening	3.5 M	(3.5 M)
Specified Extension Program: Farm Safety	1.0 M	(1.0 M)

DEVELOPING NEW PROCESSES AND VALUE-ADDED PRODUCTS		
Competitive Grants (NRI)	11.0 M	(0)
Other Research Programs: Supplemental and Alternative Crops	0.9 M	(0.3 M)
ENHANCING COMPETITIVENESS OF AGRICULTURE AND REVITALIZING RURAL AMERICA		
Competitive Grants (NRI)	10.0 M	(0)
Special Research Grants (Sec. 2c): Rural Development Centers	0.5 M	(0.5 M)
Extension Program: Rural Development Centers	1.0 M	(0.9 M)
National Extension Initiative: Revitalizing Rural America	5.0 M	(0)
Other Research Programs: International Trade Development Centers	3.1 M	(3.1 M)
ENHANCING THE PRODUCTIVITY AND SUSTAINABILITY OF PLANT SYSTEMS		
Competitive Grants (NRI)	50.0 M	(22.2 M)
Special Research Grants (Sec. 2c): Tropical and Subtropical Agriculture	3.3 M	(3.3 M)
ENHANCING THE PRODUCTIVITY AND SUSTAINABILITY OF ANIMAL SYSTEMS		
Competitive Grants (NRI)	30.0 M	(22.2 M)
Other Research Programs: Aquaculture Centers	3.7 M	(3.7 M)
Special Research Grants (Sec. 2c): Minor Use Animal Drugs	0.3 M	(0.2 M)
ENHANCING EXCELLENCE OF HUMAN RESOURCES		
National Extension Initiative: Youth-at-Risk	10.0 M	(0)
Higher Education		
--1890 Capacity Building Grants	11.0 M	(7.3 M)
--Graduate Training Fellowships	5.0 M	(2.8 M)
--Institution Challenge Grants	3.0 M	(1.0 M)
--Post Doctoral Fellowships	2.0 M	(0)

It should be noted that base funds are allocated state-by-state to varying degrees to support all the above programs.

Finally, Mr. Chairman, I have attached a series of tables depicting our recommendations in terms of budget authority with comparisons to the Gramm-Rudman-Hollings Fiscal Year 1990 appropriations and Fiscal Year 1991 recommendations in the President's budget.

Mr. Chairman, we respectfully submit this statement for the record. We thank you again for this opportunity to discuss our needs with you. We welcome your comments and questions.

APPENDIX
TO
STATEMENT
OF
KENNETH R. FARRELL

MARCH 29, 1990

TABLE I: SUMMARY OF FUNDING RECOMMENDATIONS FOR RESEARCH, EXTENSION AND HIGHER EDUCATION
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
Base Programs			
Research	202,756	197,689	214,921
Extension	265,054	270,627	282,708
Higher Education	2,810	0	2,810
Special Programs			
Research	123,554	132,204	224,441**
Extension	104,126	75,049	133,740
Higher Education	11,111	17,000	21,000
TOTAL	709,411	692,569	879,620

* GRH refers to the Gramm Rudman Hollings balanced budget law

** Includes $107.5 million of new funding for the National Research Initiative (NRI) for Agriculture, Food and Environment

TABLE II: RESEARCH FUNDS
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
BASE PROGRAMS			
Hatch Act Base Funds	155,058	158,545	164,361
McIntire-Stennis Act	17,279	12,975	18,316
Evans-Allen Program (1890)	25,012	26,169	26,513
Animal Health (Section 1433)	5,407	0	5,731
TOTAL BASE PROGRAMS, RESEARCH	202,756	197,689	214,921
RESEARCH GRANTS P.L. 89-106			
Competitive Grants (Sec.2b)			
Plant Science	7,751	a	a
Human Nutrition	1,481	a	a
Animal Science	4,937	a	a
Biotechnology	18,775	a	a
Basic Pest Sciences	1,975	a	a
Stratospheric Ozone/Global Change	3,653	a	a
Forestry	3,949	a	a
NRI-Nat'l Resources & Environment	0	15,000	30,000
NRI-Nutrition, Food Quality, and Health	0	5,000	19,000
NRI- Plant Systems	0	50,000	50,000
NRI- Animal Systems	0	30,000[b]	30,000
NRI-Engineering Processes and Value-Added Products	0	0	11,000
NRI-Markets, Trade, and Rural Revitalization	0	0	10,000
Total Competitive Grants	42,521	100,000	150,000

TABLE II. RESEARCH FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
SPECIAL GRANTS (SEC. 2C)			
National Programs			
Acid Precipitation	653	0	692
Animal Health	5,633	0	*
Aquaculture Research General	563	0	*
Integrated Pest Management	2,903	4,000	4,000
Minor Use Animal Drugs	226	329	329
Biological Impact Assessment	123	300	300
Pesticide Clearance	1,975	3,000	3,000
Pesticide Impact Assessment	2,437	2,968	2,968
Rural Development Centers	494	0	524
Tropical and Subtropical Agriculture	3,299	0	3,299
Water Quality and Management	6,615	10,000	10,000
Global Change	0	5,000	5,000
Total Special Grants (2c)	24,921	25,597	30,112
Special Problem Grants[5]	30,907	0	30,907
TOTAL RESEARCH GRANTS	98,349	125,597	211,019

TABLE II. RESEARCH FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
OTHER RESEARCH PROGRAMS			
Rangeland (P.L. 95-113)[a]	469	0	c
Aquaculture Centers (P.L. 95-113)[d]	3,703	0	3,703
Supplemental & Alternative Crops (P.L. 95-113)	321	918	918
International Trade Development Centers[d]	3,112	0	3,112
Critical Materials (P.L. 98-284)[e]	5,300	0	0
Low Input Sustainable Agriculture (P.L. 99-198)	4,394	4,450	4,450
TOTAL OTHER RESEARCH PROGRAMS	17,299	5,368	12,183
Federal Administration			
Direct	13,336	12,239	12,239
1890 Capacity Building Grants[f]	(5,430)	(11,000)	(11,000)
NET FEDERAL ADMINISTRATION	7,906	1,239	1,239
TOTAL RESEARCH	326,310	329,893	439,362

[a]Incorporated within the National Initiative for Research on Agriculture, Food and the Environment.

[b]Includes funds transfered from Special Grants for Animal Health. Animal Health formula funds are contained as a separate item.

[c]Some site specific 2c grants are included in the total for Special Problem Grants which are established to address acute problems in specific states.

[d]Any funding increases should be awarded competitively.

[e]Some states were moved to Supplemental and Alternative crops for FY 1991.

[f]See Higher Education, Table IV.

TABLE III: EXTENSION FUNDS
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
BASE PROGRAMS			
Smith-Lever 3b and 3c Base Programs	242,272	246,535	256,808
D.C. Extension	946	1,000	1,000
1890 Colleges & Tuskegee U	21,836	23,092	24,900
TOTAL BASE PROGRAMS, EXTENSION	265,054	270,627	282,708
NATIONAL EXTENSION INITIATIVES			
Water Quality & Management	5,211	15,500	15,500
Improving Nutrition, Diet & Health			
Food Safety and Quality	0	2,000	5,000
Revitalizing Rural America	0	0	5,000
Competitiveness of American Agriculture			
Sustainable Agriculture	(4,450)[a]	0	2,500[b]
Youth-at-Risk	0	10,000	10,000
TOTAL NATIONAL EXTENSION INITIATIVES	5,211	27,500	38,000

TABLE III. EXTENSION FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
SPECIFIED PROGRAMS[c]			
Expanded Food and Nutr. Ed. Program (EFNEP)	58,197	21,600	58,635
Rural Development Centers	943	0	950
Integrated Pest Management	7,110	7,164	8,250
Pesticide Impact Assessment	2,561	3,580	3,580
Financial Management	1,416	0	0
Urban Gardening	3,474	0	3,500
Farm Safety	963	0	970
Pacific Rim Program	645	0	650
1890 Extension Facilities	9,437	9,508	9,508
Renewable Resources Extension Act	2,744	0	4,000
Farmer Assistance Grants	3,325	0	0
TOTAL SPECIFIED PROGRAMS	90,815	41,852	90,043
Federal Administration, Direct	8,745	5,697	6,347
Pacific Rim Program	(645)[d]	0	(650)[d]
NET FEDERAL ADMINISTRATION	8,100	5,697	5,697
TOTAL EXTENSION	369,180	145,676	416,448

[a]See Low Input Sustainable Agriculture under Research in Table II

[b]New program for Extension only

[c]Established from time to time to address specific acute problems

[d]See explanation under Specified Programs

TABLE IV. HIGHER EDUCATION FUNDS
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
BASE PROGRAM			
Morrill-Nelson Act	2,810	0	2,810
OTHER PROGRAMS			
Graduate Training Fellowships	2,816	4,000	5,000
Institution Challenge Grants	987	2,000	3,000
1890 Strengthening Grants[a]	1,678	0	0
1890 Capacity Building Grants[b]	5,430	11,000	11,000
Post Doctoral Fellowships	0	0	2,000
Total Other Programs	11,111	17,000	21,000
TOTAL HIGHER EDUCATION	13,921	17,000	23,810

[a]Included in 1890 Capacity Building Grants in 1991 request.

[b]Funded under Federal Administration, Research.

TABLE V. INTERNATIONAL AGRICULTURE PROGRAMS
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
INTERNATIONAL SCIENTIFIC AND TECHNICAL COOPERATION			
Scientific and Technical Exchanges	1,591	1,816	1,900
Administration of International Research	1,415	1,433	1,700
International Organization Affairs	604	612	612
Total	3,610	3,861	4,212
INTERNATIONAL AGRICULTURAL DEVELOPMENT			
Agribusiness Promotion	301	305	305
Institutional Cooperation (ISEC)	99	100	200
PL 480 Support	64	65	65
Cochran Middle Income Fellowship Program	1,473	0	2,000
Total	1,937	470	2,570
OPERATION FAST	494	500	500
FOREIGN CURRENCY RESEARCH PROGRAM	875	0	8,000
Total OICD	6,916	4,831	15,282

TESTIMONY

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

OF THE

COMMITTEE ON APPROPRIATIONS
U. S. HOUSE OF REPRESENTATIVES

ON BEHALF OF THE

DIVISION OF AGRICULTURE'S 1991 BUDGET COMMITTEE

OF THE

NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

BY

DR. HOOVER CARDEN

ADMINISTRATOR, 1890 EXTENSION PROGRAM
PRAIRIE VIEW A&M UNIVERSITY

MARCH 29, 1990

MR. CHAIRMAN AND MEMBERS OF THE APPROPRIATIONS COMMITTEE:--

I am Hoover Carden, Administrator of the 1890 Cooperative Extension Program, Prairie View A&M University - Texas, the 1890 Representative for the FY 1991 Budget Committee, Division of Agriculture; and member of the Budget Committee, Extension Committee on Policy.

I appreciate the opportunity to make a statement in support of the 1890 and 1862 Land-Grant Colleges and Universities' FY 1991 budget request. The budget has been reviewed and sanctioned by the Division of Agriculture Budget Committee and the National Association of State Universities and Land-Grant Colleges and Universities. However, my specific purpose is to precisely outline for you the need and value for Extension programs emanating from the sixteen, 1890 Land-Grant Colleges and Universities and Tuskegee University.

NEED AND JUSTIFICATION

The 1890 colleges and universities have done a superb job in reaching the hard-to-reach and providing access to those individuals whom we have classified as being left behind. Through Extension program activities thousands of families and individuals have improved their level of living and are in sight of achieving part of the American dream. Therefore, we need to increase our efforts and expand our basic programming efforts to include food safety; youth at risk; water quality; diet, nutrition and health; low-input sustainable agriculture; and rural economic development.

The USDA Task Force, consisting of five 1890 land-grant colleges presidents and five USDA agency heads appointed by the Secretary of Agriculture, identified that USDA and the land-grant universities can make a significant contribution toward addressing the needs and problems of low-income and minority families and farmers maintain farm ownership. Over the years the Land-Grant Colleges and Universities have made concerted efforts to reach and assist with the needs of low-income farmers and families. But due to the cultural differences of these farmers and families more time and resources are needed in order to give adequate educational assistance needed by these individuals. Therefore, the request in the Division of Agriculture's FY 1991 budget request is badly needed in order to maintain and increase our efforts to these needy clientele groups.

Under the FY 1990 authorization for 1890 institutions and Tuskegee University, additional funds were requested as follows:

$26 million - Executive Request
(Congress reduced the request to $22 million)

However, because of the Gramm-Rudman sequestration, the final figure ended up being $21,836,000. There has been an increase in collaborative efforts among 1890 and 1862 Institutions and among 1890 Institutions and federal, state and county agencies, and groups to do joint multi-state, multi-region interdisciplinary programs. This mode of operations has added significantly to the quality and diversity of education and

information outreach efforts of these institutions. This trend is expected to continue into FY 91 and beyond.

These efforts have helped in shaping FY 1991 budget recommendations for 1890 Institutions and Tuskegee University. The recommended funding for FY 91 by the Division of Agriculture and National Association of State Universities and Land-Grant Colleges is $24,900,000. If this funding level requested is not maintained it will be impossible for the 1890 Institutions to continue to be effective in their educational programming efforts.

Unprecedented changes now characterizing the U.S. are the Food and Agricultural system, the social system, the educational system, environmental technologies, and the globalization of markets and expanding technology which will significantly affect how and with whom 1890 Institutions do business in the future.

Historically, under-represented groups tend to cluster in fields they perceive as friendly and where they can exercise their talents fully, without discrimination and with a good chance of recognition and reward. When this fact is ignored by providers, these groups do not develop to their fullest potential. The groups referred to in this statement are not restricted to race, sex or national origin but include farm families, infants, youth, adults and the elderly, skilled labor, unskilled labor, single-parent families, teenage mothers and fathers, etc. The pattern of low expectations is evident

throughout these groups and planned sustainable improvements require systematic changes.

Poverty continues to penetrate and grip a large number of children and adults, including a disproportionate share of minority children. It takes away people's capacity to dream and desire to move themselves from the stronghold of poverty. It affects the total person, the family, community, local, state and federal governments, which translates into no skills, no education, no money and no hope.

1890 Extension has addressed issues of under-represented groups for years, using modest or very limited resources. Relationships of a decade ago are no longer valid, and sweeping adjustments to current trends are necessary. Now, it needs help in building institutional capacity and procedure that will strengthen programs in support of a long term strategic approach to meet the needs of the under-represented group.

The budget request for 1890 and 1862 Institutions for FY 91 is $24,900,000 base; $10,000,000 for 1890 facilities and $381,648 for 1862. This funding will give these institutions greater capability to respond to the changing needs of priorities listed below.

A. Provide an educational pathway to learn, develop, make decisions, set goals and develop self-esteem for youth and families who are at risk.

B. Seek ways to work cooperatively with a wide range of universities, governments, businesses, and private sectors organizing to describe dynamic experiences for key leaders and clientele.

C. Build a staff to a level of expertise who can meet the challenges of societal issues more effectively through training, publications and education while demonstrating alternative methods and options toward the resolution or abatement of societal problems.

TESTIMONY

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

OF THE

COMMITTEE ON APPROPRIATIONS
U. S. HOUSE OF REPRESENTATIVES

ON BEHALF OF THE

RESIDENT INSTRUCTION COMMITTEE ON ORGANIZATION AND POLICY

OF THE

NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

BY

DR. JAMES L. OBLINGER

ASSOCIATE DEAN AND DIRECTOR OF ACADEMIC AFFAIRS
NORTH CAROLINA STATE UNIVERSITY

MARCH 29, 1990

I want to urge your support of USDA's higher education programs as described in materials submitted in reference to NASULGC's 1991 Budget Committee Recommendations. These programs are uniquely designed to produce college and university graduates with the requisite competencies to advance global competitiveness of the U.S. food and agricultural sector. Without such nationally supported initiatives, this Nation's food and agricultural scientific and professional expertise base is further jeopardized.

Specifically, the USDA higher education programs are targeted toward attracting outstanding scholars into advanced degree programs and post-doctoral studies enhancing the quality of college and university programs (curricula, faculty, delivery modes, etc.) and strengthening the teaching and research competencies of our 1890 land-grant institutions. They are all competitive in nature and either require or encourage matching support, thereby using Federal dollars to stimulate collateral State and private support.

The President's FY 1991 budget includes three of the proposed programs. However, it does not allow a post-doctoral program nor adequately provide for the Graduate Training Grants Program or the Challenge Grants Program. For example, the Executive Budget provides for supporting about 60 doctoral and 30 master's fellows. This program has had profound affect on bringing superior scholars into doctoral studies in such important areas as water science, biotechnology, food science/nutrition, international marketing and bioprocessing or engineering. At a minimum, we need to be supporting 120 such students annually. The Challenge Grants Program, while only one year old, is unquestionably motivating schools to rethink curriculum and to plan more effectively for faculty development.

The Nation's colleges of agriculture and natural resources are the predominant producers of scientists, professionals and managers with food, agricultural and natural resource expertise. They offer the greatest potential for the future development of sophisticated agricultural mindpower. Efforts must be taken to strengthen these educational programs primarily responsible for the development of future generations of food and agricultural scientific and professional expertise.

The Resident Instruction Committee on Organization and Policy believes that now, more than ever, the U.S. higher education system in food, agriculture and natural resources must reach new levels of excellence. Outstanding students, including women and minorities, must be attracted to these disciplines and relevant programs must be sufficiently funded to support excellence. RICOP maintains that this enhancement process can best be supported by a national partnership between colleges and universities, agribusiness and industry, the states and the Federal Government.

Recognizing the need for excellence, Congress has provided funding since 1984 ($2,852 million in FY 89) for the Competitive Graduate Training Grants Program. Joining in that recognition, the Executive Branch included $4 million in its FY 1990 USDA budget for the Graduate Training Grants Program and also included two other programs, i.e., Institution Challenge Grants at $2 million and 1890 Institution Capacity Building Grants at $11 million.

Whether or not we face them or admit that they exist, there are very serious problems with the merging human capital base on which our Nation's food, agricultural and natural resource system will depend. Plenty of current evidence--mediocre aptitude scores, stagnant or declining enrollments--indicates that science, in general, is out of style and is a low priority among our Nation's young people. Fewer than 700 U.S. citizens--less than 14 per state--earned Ph.D.'s in the food, agricultural and natural resource sciences last year.

To develop the requisite human capital for the food, agricultural and natural resource system, we must focus upon four critical challenges--improving curricula, attracting and retaining scholars, increasing minority participation and enriching program quality. The food, agricultural and natural resource system faces significant human capital development challenges because it has not invested sufficiently and appropriately in the human resources marketplace.

The Office of Higher Education Programs under the Secretary of Agriculture today has evolved an effective array of programs that address the development of the most important component of our food, agricultural and natural resource system: human capital. Any coherent plan for maintaining the strength and competitiveness of American agriculture must include human capital development as a major parameter in the equation. Human capital development was stressed by President Bush in his State of the Union address last week. Our food, agricultural and natural resource system needs bright young minds, in sufficient numbers, educated to the highest level appropriate, taught in institutions equipped and staffed by faculty members dedicated to providing quality education.

A more specific discussion of each of RICOP's recommendations follows:

GRADUATE TRAINING GRANTS (FELLOWSHIPS)

During the past five years, both the National Agricultural Research and Extension Users Advisory Board and the U.S. Joint Council for the Food and Agricultural Sciences have identified scientific expertise development as a top national agricultural science and education priority. Each group has repeatedly endorsed Executive Budget recommendations for the Graduate Training Grants (Fellowships) Program.

Established in 1984, with successive calls for proposals in 1987 and each year since, this competitive program is open to all colleges and universities, whether land grant or not. It has provided fellowships with sufficient stipend support to attract outstanding young men and women in Ph.D. degree programs in areas of national need spanning our food, agricultural and natural resource system.

Over this period, 433 doctoral fellowships have been awarded in five national needs areas: bioprocessing or agricultural engineering; plant or animal biotechnology; food, forest products and agribusiness marketing or management; food science and human nutrition and water science.

o The program is competitive. In the most recent three years, only 22 percent of the proposals submitted and only 13 percent of the fellowships requested have been funded.

o Each year, the program has attracted successful applicants from both inside and outside of the land-grant college of agriculture system. For example, fellowships have been awarded to Stanford University, Massachusetts Institute of Technology, the University of Iowa, the University of Chicago and the University of California at Los Angeles. Likewise, fellowships have been awarded to the College of Biological Science at the University of Minnesota-St. Paul and to the College of Commerce and Business Administration at the University of Illinois. It addresses quality and asks simply: Where are the best locations and programs to nurture the graduate education of the young people who will be the discoverers of tomorrow?

o The program succeeds in bringing talented young scientists into the food, agricultural and natural resource system. The mean Graduate Record Exam score for the first 300 fellows selected into the program was almost 1,300, more than 300 points higher than the average graduate student in agriculture. To introduce these fellows to each other, a national symposium was held at the National Academy of Sciences. Anyone present would have been delighted to hear the exchanges and discussions which took place between these young men and women--food scientists and nutritionists from Tufts University and the University of Missouri, biotechnology fellows from Purdue University and Cornell University, agricultural engineers from Texas A&M and North Carolina State University. They were articulate, critical and thoughtful.

INSTITUTION CHALLENGE GRANTS

The competitive Institution Challenge Grants Program will catalyze significant improvements in the quality of food, agricultural and natural resource higher education programs. It will stimulate curricular change, enhance student experiential learning, recruit highly qualified students, upgrade scientific teaching instrumentation and augment faculty development activities.

Some 35 grants ranging from $50,000 to $100,000 will be awarded in the targeted areas. The program will generate an additional $2 million dollars for instructional improvements in food, agricultural and natural resource higher education programs through a non-federal matching requirement for grant recipients.

Any educational institution having demonstrated excellence in food, agricultural and natural resource teaching may compete for a challenge grant. Cooperative activities among educational institutions and between universities and other cooperators will be encouraged.

1890 INSTITUTION CAPACITY BUILDING GRANTS

The proposed 1890 Institution Capacity Building Grants Program will help the 1890 land-grant colleges and Tuskegee University enhance their ability to educate effectively. Historically, the 1890 colleges and universities have been the principal contributors of minority graduates to the food, agricultural and natural resource system. Additional resources must be made available for these universities to develop faculty, improve curricula, upgrade instructional equipment, foster educational partnerships and enhance their research capability.

A decade from now, it is expected that 85 percent of new workers in the U.S. will be members of minority groups and women. Therefore, significantly more minority graduates must become available to assume professional roles in the food, agricultural and natural resource system.

Grants from this program encourage universities to provide matching contributions from non-federal sources and several of the institutions are actively seeking matching funds. Participating universities are required to cooperate with one or more USDA agencies in developing a proposal, in identifying potential non-federal matching funds and in conducting capacity building programs and activities.

POST-DOCTORAL FELLOWSHIPS

Sustaining our historic level of scientific knowledge and competence requires a continuing infusion on intellectual expertise. A 1988 report by the National Academy of Sciences' National Research Council's Board of Agriculture entitled "Educating the Next Generation of Agricultural Scientists" addresses the need for providing expanded opportunities for post-doctoral studies specifically targeted for the food and agricultural sciences.

The Post-Doctoral Fellowship Program will serve to develop needed food and agricultural scientific expertise while also stimulating cutting edge research across the agricultural system. The program will be managed so that public and private universities will compete for grants to recruit and advance the training of outstanding young U.S. citizen doctoral scientists in food and agricultural areas. Scientists emerging from the program will be valuable replacements for increasing losses due to retirements in our federal laboratories and our university system.

RICOP urges Congress to increase the FY 1991 Budget for the Competitive Graduate Training Grants to $5 million and increase the Institution Challenge Grants to $3 million. In addition, RICOP urges Congress to initiate a post-doctoral fellowship program for $2 million. These commitments, coupled with $11 million for the 1890 Institution Capacity Building Grants and the $2.85 million in Morrill-Nelson funding, would provide $23.85 million for Federal Government support for a coordinated package to: 1) enhance higher education in the food and agricultural sciences and 2) mainstream minority expertise development. Matching funds from the agricultural industry and other sources will mean even more far-reaching effects of these federal funds.

Please lend your support to these national initiatives. They are a part of the solution to the problems currently compromising our competitiveness in global markets and our quality of life in the United States. Please support food and agricultural sciences higher education programs at a level totaling $23.85 million in FY 1991, i.e., $5 million for Graduate Training Grants, $3 million for Challenge Grants, $11 million for 1890 Capacity Building Grants, $2 million for Post-Doctoral Fellowships and $2.85 million for the Morrill-Nelson Program.

STATEMENT OF THE EXTENSION COMMITTEE ON ORGANIZATION AND POLICY OF THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

presented to

The House Appropriations Subcommittee for
Rural Development, Agriculture, and
Related Agencies

by

Kenneth R. Bolen
Director
Colorado State University Cooperative Extension

March 1990

My name is Kenneth Bolen. I am Director of Colorado State University Cooperative Extension located at Fort Collins, Colorado. Today I am representing the Extension Committee on Organization and Policy (ECOP) to present the FY91 budget request from the state partners of the Cooperative Extension System.

As you are aware, the Cooperative Extension System (CES) includes and is linked to the federal partner through the Extension Service (ES) - USDA. It was created in 1914 with the purpose of improving economic and social conditions in rural America. This purpose would be accomplished through educational programs conducted in communities through a partnership among the federal, state and local governments. The key element of this visionary concept was the linkage of the knowledge and research capacity of the land-grant universities to the needs of the public.

At first, our work focused on improving agriculture (then the mainstay of the economy), assisting rural families through promoting better nutrition and home management, encouraging rural young people to have high aspirations through youth development programs like 4-H, and helping rural community leaders develop leadership and create services necessary to the people. As the economy has changed in rural America, and as the population has shifted to towns and cities, Extension programs have changed to meet different social and economic conditions, always remaining true to the basic charter in the Smith-Lever Act--"to aid in diffusing among the people of the United States useful and practical information...and to encourage (its) application..."

The Cooperative Extension System is focusing increased attention on five important national initiatives: Water Quality and Management; Revitalizing Rural America; Youth at Risk; Improving Nutrition; Diet and Health (with special emphasis on food safety and quality); Competitiveness of American Agriculture (with special emphasis on two issues: sustainable agriculture and international marketing).

ES-USDA FY91 Budget Request
National Association of State Universities and Land-Grant Colleges (NASULGC)

	FY90 Appropriation After Gramm-Rudman-Hollings	FY91 NASULGC Request
Base Programs	$265,054,000	$282,708,000
-Specified Programs	90,170,000	90,043,000
National Initiatives	5,211,000	38,000,000
Federal Administration	8,745,000	5,697,000
Total	$369,180,000	$416,448,000

Base Funding

The Cooperative Extension System is made possible through a federal, state and local government partnership with each entity sharing in program decisions and funding commitments. The base funding at the federal level includes: Smith-Lever 3b and c; 1890 Institutions and Tuskegee; and District of Columbia Extension.

The erosion of base funds by more than 20 percent in real funding levels, over the past ten years, impairs the ability of the system to maintain the core staff and programs needed to respond to the critical needs of the Extension clientele. We appeal to you to reverse the erosion in base funding to help us maintain the basic infrastructure of the Cooperative Extension System.

Federal funds appropriated to support base programs are matched by more than two dollars for one with state, local and private sector support. Currently with the Cooperative Extension System each $3.00 in federal Smith-Lever funds leverages in excess of $7.00 in state, county and other public or private sector funds.

Although the total increase requested for Smith-Lever Formula 3b and c funds is approximately 6 percent, the request for the 1890 Institutions and Tuskegee is somewhat greater due to their unique needs and their funding structure not requiring state matching funds.

A recently completed systemwide planning effort identified priority national initiatives for Extension programs. Additional federal funds are requested to focus on the following:

National Priorities

Water Quality and Management

An expanded role in water quality education consistent with plans for water quality programs under a government-wide initiative is reflected in the proposed $10.3 million increase for 1991. Extension funds would continue to support eight demonstration projects and 37 hydrologic units started in 1990 and would expand those programs to cover additional sites in conjunction with the Soil Conservation Service. Funds would also support additional training for state Extension professionals to better enable staff to interpret and transfer results of water quality research programs.

Youth at Risk

A new $10 million youth at risk program is proposed to finance Extension participation in comprehensive prevention/intervention projects in both rural and urban communities or neighborhoods with serious risk factors such as poverty, high incidence of drug use, teen pregnancy and welfare dependence. Projects to be supported would involve community-based

organizations and local, as well as other non-federal, sources of funding. Projects would be comprehensive and intensive, including significant efforts on early childhood development. There would be commitments to sustain the projects over a period of years and there is a commitment to evaluation as the projects go forward.

Food Safety and Quality

There is increased concern among consumers and producers about chemical residues, microbial contamination and other food safety issues. This has increased the burden on the Cooperative Extension system to provide information in this important area. We are requesting $5 million to provide for educational efforts with producers to help avoid violative levels of animal drugs and pesticides and to assist consumers in understanding safe food handling practices.

Revitalizing Rural America

This initiative is to improve educational support to help revitalize rural America through a variety of efforts. Management and marketing education, increased emphasis on the retention and expansion of existing businesses, assistance in devising new institutional arrangements to meet family and community needs and efforts to increase and develop the leadership pool. A wide variety of audiences are, and would continue to be, involved--business owners and operators, local community leaders, local and state government officials and others. Our request is for $5 million to address this national priority.

Competitiveness and Sustainable Agriculture

The Cooperative Extension System is conceptually tuned to sustainable agriculture and is heavily involved in the initiation and adoption of programs that are environmentally sound, economically feasible and socially acceptable. The Cooperative Extension System is working closely with the Cooperative State Research Service, the State Agricultural Experiment Stations and other organizational entities with mutual interests. We support the $4.5 million budget request included in the President's executive budget for the Cooperative State Research Service to develop a joint research/extension program to support sustainable agriculture. In addition, the Cooperative Extension System is requesting $2.5 million to support Extension's collation of existing best management practices and implementation into practical sustainable systems.

Other Special Programs - Smith-Lever 3d

Integrated Pest Management

The Integrated Pest Management (IPM) Program is a systems approach implemented to reduce pest losses and pesticide use. IPM has utilized computer decision making at the farm level to deal with complicated pest infestation and adjustment factors and thus improve environmental decision making. Both farmers and private sector agri-businesses are involved. For FY91 our budget request in support of IPM is $8,250,000.

Farm Safety

Over the last decade an annual average of 1800 rural Americans were fatally injured in farm or ranch accidents. Moreover, an estimated 180,000 disabling injuries and 1,800,000 accidents serious enough to require medical attention also happened to farm or ranch residents. The Cooperative Extension System requests $970,000 to continue this national safety education program.

Urban Gardening

The urban gardening program enables metropolitan residents to grow their own fresh fruits and vegetables, thereby improving their self reliance and out-of-pocket food costs. Community development and greater cooperation, as well as personal involvement in group goals result from urban gardening participation. Estimates from previous years indicate that $20 million annually in fruits and vegetables are grown in urban gardening programs of Extension nationwide. Urban families, especially the young, elderly and unemployed not currently engaged in gainful endeavors, are the primary audience for urban gardening. The NASULGC FY91 budget request for this program is $3.5 million.

Expanded Food and Nutrition Education Program

Americans increasingly are aware of the importance that diet and nutrition play in preventing disease. The nation's 35 million people who daily live in poverty often lack minimally adequate diets for their families. Without proper nutrition, resultant poor health, rising health care costs, inability to work, job absenteeism, prevent the poor from rising above their conditions. The Expanded Food and Nutrition Education Program helps low income families acquire knowledge and skills needed to attain better nutrition in their homes. The Cooperative Extension System requests $58,635,000 to continue this program at the current level of participation. If this request is approved, professional and paraprofessional staff of the Cooperative Extension System will continue to implement proven and innovative methods for increasing adoption of sound food and nutrition practices among limited resource audiences.

It should be noted that the National Association of State Universities and Land-Grant Colleges opposes the imposition of the matching requirement proposed for this program in the executive budget. Such a requirement could result in the reduction or elimination of this program in areas where it's most needed.

Rural Development Centers

Rural Development Centers have been prominent in identifying America's non-metropolitan needs in basic and applied science. Their role in drawing resources together for study and action have made them unique assets in technology transfer and in raising citizen and academic awareness of changing conditions in rural America. The budget request is for $950,000 for FY91 to continue the Rural Development Centers at the current level of operation.

Pesticide Impact Assessment

U.S. agricultural production is heavily dependent on chemicals for protection against pests. Potential crop losses range from 25 to 50 percent of harvests. The American public wants economical and abundant agricultural products, but also seeks a safe, contaminate-free environment. Federal and state laws require all pesticides be reviewed and environmental impacts be considered by the Environmental Protection Agency and U.S. Department of Agriculture scientists. Professionals in the Cooperative Extension System are instrumental in making the current review and control system for pesticides workable. The FY91 budget request for Pesticide Impact Assessment is $3,580,000.

Additional Extension Authorizations

Pacific Rim Project

The Agricultural Development in the American Pacific (ADAP) Project is focused on supporting three basic efforts between and among four Pacific territories and the state of Hawaii. Those efforts address unique communication problems associated with widely dispersed populations, the upgrading of staff qualifications and the sharing of staff between and among institutions. The FY91 budget request is for $650,000 to continue this program at the current level of operation.

Renewable Resources Extension Act

The Renewable Resources Extension Act authorizes funds to support programs of technology education to help owners and managers protect, regenerate and improve the productive potential of privately owned forest and rangelands. The Cooperative Extension System is requesting an increase in funding from the current level of $2,744,000 to the FY91 request of $4 million. This increase would allow an expansion of this needed educational program to expand and improve renewable resources which are currently subject to depletion and deterioration when not carefully managed.

1890 Extension Facilities

The Cooperative Extension System is requesting $9,508,000 in FY91 to continue the acquisition and improvement of Extension facilities and equipment at 1890 institutions and Tuskegee as authorized in the Food Security Act of 1985.

EXTENSION FUNDS
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
BASE PROGRAMS			
Smith-Lever 3b and 3c Base Programs	242,272	246,535	256,808
D.C. Extension	948	1,000	1,000
1890 Colleges & Tuskegee U.	21,836	23,092	24,900
TOTAL BASE PROGRAMS, EXTENSION	265,054	270,627	282,708
NATIONAL EXTENSION INITIATIVES			
Water Quality & Management	5,211	15,500	15,500
Improving Nutrition, Diet & Health			
Food Safety and Quality	0	2,000	5,000
Revitalizing Rural America	0	0	5,000
Competitiveness of American Agriculture			
Sustainable Agriculture	(4,450)[a]	0	2,500[b]
Youth-at-Risk	0	10,000	10,000
TOTAL NATIONAL EXTENSION INITIATIVES	5,211	27,500	38,000

EXTENSION FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
SPECIFIED PROGRAMS[c]			
Expanded Food and Nutr. Ed. Program (EFNEP)	58,197	21,600	58,635
Rural Development Centers	943	0	950
Integrated Pest Management	7,110	7,164	8,250
Pesticide Impact Assessment	2,561	3,580	3,580
Financial Management	1,416	0	0
Urban Gardening	3,474	0	3,500
Farm Safety	963	0	970
Pacific Rim Program	645	0	650
1890 Extension Facilities	9,437	9,508	9,508
Renewable Resources Extension Act	2,744	0	4,000
Farmer Assistance Grants	3,325	0	0
TOTAL SPECIFIED PROGRAMS	90,815	41,852	90,043
Federal Administration, Direct	8,745	5,697	6,347
Pacific Rim Program	(645)	0	(650)
NET FEDERAL ADMINISTRATION	8,100	5,697	5,697
TOTAL EXTENSION	369,180	345,676	416,448

[a]See Low Input Sustainable Agriculture under Research

[b]New program for Extension only.

[c]Established from time to time to address specific acute problems.

TESTIMONY

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

OF THE

COMMITTEE ON APPROPRIATIONS
U. S. HOUSE OF REPRESENTATIVES

ON BEHALF OF THE

EXPERIMENT STATION COMMITTEE ON ORGANIZATION AND POLICY (ESCOP)

OF THE

NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

BY

DR. JAMES J. ZUICHES

DIRECTOR, WASHINGTON STATE UNIVERSITY AGRICULTURAL RESEARCH CENTER
AND
CHAIRMAN, EXPERIMENT STATION ON COMMITTEE ORGANIZATION AND POLICY

MARCH 29, 1990

TESTIMONY
OF
JAMES J. ZUICHES

Director of the Washington State University Agricultural Research Center
and
Chairman of the Experiment Station Committee on Organization and Policy (ESCOP) Subcommittee on Budget

This testimony addresses the congressional appropriations for agricultural research to the experiment stations through the Hatch Act and related legislation and the relationship of SAES priorities to the National Research Initiative on agriculture, food, and environment.

Through the sections and subtitles contained in Title XIV of the Food Security Act of 1985, the Congress has provided guidance and funding support for agricultural research, extension and resident instruction programs at land grant universities; and these systems have contributed significantly to the development and success of this nation's agricultural science and education system and to the health and well being of rural and urban Americans.

The support and appropriations provided to the State Agricultural Experiment Stations have helped create a system of which we all can be proud; but we still face numerous challenges associated with our agricultural production, processing and distribution systems. At the same time we have many new opportunities to improve the production efficiency and the global competitiveness of our agricultural system while improving the safety and nutritional value of our food supply, the safety and quality of our air and water, and conserving our natural resources for future generations.

The State Agricultural Experiment Stations, along with affiliated groups in forestry, home economics, veterinary medicine, and the 1890 Land Grant Universities, have an active, working strategic planning process that fosters a continual assessment of the priorities for research so they address continuing and emerging issues. The ESCOP plan is updated annually and a major revision is undertaken every four years. The quadrennial update involves a concerted two year effort to solicit input from a broad cross section of groups involved with agricultural research.

Input is received from industry, from professional and scientific societies, from every state through the State Agricultural Experiment Stations system, from affiliated groups such as forestry, home economics, and veterinary medicine, and from all federal agricultural research agencies. This past year, more than 600 separate recommendations were submitted from outside the State Agricultural Experiment Station system for new and continuing research. The input was truly broad based.

The process also included a major policy symposium held last summer to debate and sharpen the recommendations, and concluded with a major workshop in August, 1989 to draft the quadrennial plan. The ESCOP quadrennial plan and research agenda are organized under the same broad headings that were used by the National Academy of Sciences in its report entitled, "Investing in Research: a Proposal to strengthen the

Agricultural, Food and Environmental System" (October 1989). This format permits an easy comparison of the agendas for research and the resources needed to address these agendas.

The agenda for research of the State Agricultural Experiment Stations is titled, "Research Agenda for the 1990's--a Strategic Plan for the State Agricultural Experiment Stations" and this agenda has been widely distributed. It charts the future directions for experiment station research.

In the recent planning process, ESCOP has identified six broad areas of research that are important to our nation's future and need to be enhanced. They address:

1. Environment and Natural Resources: Research to protect water quality and the conservation and efficient use of water; to improve the compatibility of agriculture, natural resources, and the environment; to develop an understanding of the impacts of global environmental change; and to improve the sustainability of natural resource productivity. This last topic encompasses core areas of forestry, rangelands and wildlife resources for recreational and commercial use.

2. Food, Nutrition and Health: Research to ensure the safety and stability of consumer foods; to understand the molecular and cellular basis of human nutrition; and to develop optimal health parameters through improved understanding of nutrition and health.

3. Engineering Processes and Products for Value-Added Improvement: Research to develop new processing technologies for added value; to expand biomaterials use and derive alternative uses of plant materials; to determine the physio-chemical properties of food and bio-materials; to develop novel food and fiber bioconversions; to quantify sensory and quality attributes of consumer products; to develop analytical methods for monitoring nutrient, toxicant, and bio-active agents in foods; and to develop new and novel packaging systems.

4. Competitiveness in Markets and Trade and Rural Revitalization: Research on these economic and social issues to enhance rural community and economic performance with a focus on developing the potential of small rural business enterprises; to improve marketing efficiency and competitiveness of agricultural products, both domestically and internationally; to develop a better understanding of the stability and well being of families, youth, and the elderly; to assess the impacts of new technologies on the environment, people and communities; to develop a better understanding of dietary patterns, health and the behavior of the food consumer; and to develop a research and education policy for agriculture and rural society.

5. Animal Systems: Research to identify mechanisms that control the composition and nutritional quality of animal products; to achieve genetic

enhancement of animal efficiency; to improve animal health and well being; to understand the biology of animal production performance; and to develop range and pasture-based animal production systems.

6. Plant systems: Research to develop systems for more safe and effective management of pests; to understand the process of genetic enhancement of plants; to develop improved plant production systems; and to improve the understanding of the use of plants to enhance the quality of the environment.

These new initiatives build on and depend on the quality of the base programs of the State Agricultural Experiment Stations. In each program area, the current strengths were specified, reallocations of the base programs identified, and new initiatives proposed. For example, in animal systems research, a substantial redirection toward biotechnology has occurred in departments of animal, poultry, and dairy science and in colleges of veterinary medicine to exploit new technologies and develop diagnostic tools, new immunogens, and a better understanding of the genetics of animal health. Active base effort in production-oriented research, especially animal health research, however, needs to be maintained and new areas of food safety issues such as residues and microbial contamination, need to be addressed. Unfortunately, the overall investment in animal systems research has been relatively stagnant, when expressed in constant dollars. A similar statement of redirection and new funding requirements to support the base program can be made for each of the other five research program areas.

To prevent further erosion of the base programs, the State Agricultural Experiment Stations are recommending a six percent increase in funding for FY 1991 in base programs, specifically Hatch Act programs, McIntire Stennis, Evans-Allen programs, and Animal Health (Section 1433) program support. These base programs provide the core federal support in each state, and leverage nearly five times additional state funds. The State Agricultural Experiment Stations oppose the proposed Executive budget's $4.3 million reduction of McIntire-Stennis support for forestry research, and oppose the proposed $5.4 million reduction in animal health (Section 1433). Both program areas provide essential, ongoing base support to solve forestry or animal health problems and to maintain the competitiveness of these industries.

As I indicated, the ESCOP planning process incorporated a broad based constituency and identified priority areas similar to the proposal of the Board on Agriculture on the National Research Council. The National Research Initiative, to strengthen the agricultural, food and environmental systems, is a means to expand the scientific effort and expand the knowledge base of the six program areas. The expansion of a competitive grants program would complement, not substitute, for enhanced funding of the base programs. Such an expansion, however, must not come at the expense of currently funded programs, particularly at the expense of base funds, for the deterioration in base funds would further reduce the competitiveness of SAES scientists in responding to these identified needs.

The State Agricultural Experiment Station system fully endorses the National Initiative for Research on agriculture, food, and environment. The Board on

Agriculture called for overall $500 million effort. We recommend that $150 million be initiated in FY 1991. Although the President's FY 1991 budget proposal called for starting the National Initiative at $100 million, of which $42.5 million is current competitive grant funds and $57.5 million is additional funding, we would point out that the Executive budget does not include two of six program areas and would not adequately support two other areas.

All six of the program areas of the National Initiative should be started in FY 1991, including the areas called Markets, Trade and Rural Revitalization (this title reflects the substance in Markets, Trade and Policy), and Engineering Processes and Value-Added Products (this title reflects better the substance of New Products, Processes and Value Added terminology used in USDA's program plan for the National Initiative). In addition, increased initial funding is recommended for the program area Natural Resources and the Environment to provide support for forestry and rangelands topical research; and for Nutrition, Food Quality and Health to address the issues of food safety, contamination and microbial hazards.

The State Agricultural Experiment Stations also recognize and are responsible for research that must be directed and closely linked to state needs. We recommend the continuation and strengthening of Special Grants (Section 2-C) programs, for Integrated Pest Management, acid precipitation, minor use animal drugs, the pesticide clearance and pesticide impact assessments program, and the Centers Program in Rural Development, Aquaculture, and International Trade. The special grants program in Water Quality and Management and Global Change also reflect selected national priority areas. One other program bears mentioning, the Alternative Agriculture or Low-Input Sustainable Agriculture (PL.99.198) effort has brought researchers, extension, and growers together in efforts to achieve a competitive and profitable system of production while reducing expensive inputs; this program deserves continued support.

In addition to the research agenda, ESCOP strongly supports the resident instruction and extension requests to strengthen education programs that affect our ability to conduct research and transfer technology in the future. Without this ability, new knowledge will not be generated and transferred to the users who would gain the economic benefits. Specific needs are for the training of future scientists. Ultimately, the agricultural research and education system and the nation are dependent on well-trained people. A well-educated cadre of highly trained scientists is the foundation necessary to solve this nation's environmental, production, and economic problems. The National Research Initiative will enable the nation's colleges and universities to make substantial progress toward alleviating the projected shortage of trained scientists. The 1890 Capacity Building Grants will strengthen these universities and colleges in their efforts to expand minority expertise in food and agriculture.

The State Agricultural Experiment Station system is dedicated to enhancing cooperation and coordination with the USDA/Agricultural Research Service, the principal federal agricultural research agency. Our review of the executive budget indicates that funds are being requested for the construction of additional laboratory space at the National Seed Storage Laboratory, Fort Collins, Colorado. This funding

is included in the budget request of the Agricultural Research Service, USDA. The National Seed Storage Laboratory represents a unique facility for American agriculture and an important component in our country's efforts for plant exploration, germplasm preservation, breeding, genome mapping and other genetic studies. ESCOP supports this budget request and hopes that Congress will do likewise.

I appreciate the opportunity to present these issues and recommendations for your consideration on behalf of the State Agricultural Experiment Station system.

THURSDAY, MARCH 29, 1990.

WATER AND SEWER GRANTS

WITNESSES

HON. BOB McEWEN, A U.S. REPRESENTATIVE FROM THE STATE OF OHIO
HON. CLIFFORD N. EVELAND, II, MAYOR, THE CITY OF WILMINGTON, OHIO

Mr. WHITTEN. Congressman McEwen?

Mr. MCEWEN. Thank you, Mr. Chairman.

Mr. WHITTEN. How do you do?

Mr. MCEWEN. Very fine.

Mr. WHITTEN. We are glad to have you.

Mr. MCEWEN. It is nice of you to allow us this opportunity. It is my privilege to introduce the mayor of Wilmington, Ohio, along with the County Commissioner and head of the Water Board from Wilmington and Clinton County.

Mr. WHITTEN. You are going to ask the other question. I thought you were going to tell me to talk to your colleagues. Go ahead.

Mr. MCEWEN. The mayor simply wants to make a little word of encouragement for the Farmers Home program. With that, I thank you for this opportunity.

Mr. WHITTEN. Thank you very much. We are glad to have you.

Mr. EVELAND. Thank you, Mr. Chairman and members of the subcommittee. I thank you for this opportunity to appear before your subcommittee today to testify in support of the water and sewer grant program.

I appear before you today to respectfully request that the Congress continue to fund the water and sewer grant program at levels above $200 million for fiscal year 1991.

The need of our nation's rural communities for clean, potable water, and the government's assistance toward that end, far exceed the level requested in the President's budget.

I support the continued funding of the water and sewer grant program at or above the fiscal year 1990 budget of $209 million because only through such expanded availability of funds can my community and our surrounding counties be able to obtain Federal assistance for a critically-needed water treatment facility.

Wilmington, Ohio, is located in Clinton County in the Southwestern corner of the State in the middle of a triangle formed by Dayton, Cincinnati, and Columbus. With a population of 10,400 people, Wilmington is the largest city within a largely rural, agricultural region. The recent development of a national service industry, the main hub of Airborne Express, at the de-activated Clinton County Air Force Base, as well as the growth of other industries and housing, has strengthened our local economy. We are not experiencing a loss of population nor jobs.

Many of those in our labor force work at the industrial air park which houses Airborne Express. A majority of the work force is drawn from the five counties which surround us. The increased demand for water has pushed our current facilities, which are quite old, to the limit. In fact, resources for future raw water supplies are quite limited through the entire Southwest Ohio region.

In 1976, a study was provided by the Ohio Department o Natural Resources titled the Southwest Ohio Water Plan. Due to the general lack of available groundwater, quality problems associated with small streams, and the lack of high-sustained stream flows, the study recommended the use of Caesar Creek and East Fork Lakes as reservoirs and a source for regional water supply. These two systems would serve 22 existing and one new public water systems, as well as a large number of rural water users.

Through an economic development grant we plan to tap the water supply at Caesar Creek Lake to provide treated, potable water not only to the city of Wilmington, but to the surrounding area, as well, through a regional water system.

Since the city of Wilmington is organizing the effort to develop the Caesar Creek water supply, the water treatment project is referred to as the Wilmington Regional Water Treatment Facility.

The existing city water treatment plant would be phased out when the regional treatment plant is built and start-up is complete and the new plant is fully operational. Total cost of a facility will be $8.5 million. We understand the matching requirement for Federal grants, and we plan to furnish the 25 percent local share.

The city meets all of the criteria for this program. We will soon submit an application to the Farmers Home Administration for water and sewer grant funds, but we do not expect to have a competitive position for these scarce funds until fiscal year 1991 when the funds become available. For these reasons we are requesting that your subcommittee continue to fund the fiscal year 1991 water and sewer grant program at the maximum feasible level, and encourage the Farmers Home Administration to review favorably the grant application for a water treatment facility for Wilmington and Southwestern Ohio.

Mr. Chairman, this concludes my statement.

Mr. WHITTEN. Thank you very much. We do appreciate it very much. This committee strongly believes in what you advocate there. May I say we have a long record—everybody on this subcommittee is on that side.

The Farmers Home Administration has a whole lot more going for it than we realize. It is a lender of last resort when your banks and others are not interested.

Mr. EVELAND. That's true.

Mr. WHITTEN. And the reason they are not is because there is a limit on what they can do. Now, they are trying this year to take a whole lot of guarantees. In the average rural area the bank can't absorb those guarantees. In the rural areas the banks don't get into it. What we try to do through the water and sewer program is one of the prime examples of what we need to do. We appreciate your interest.

Bob, we appreciate your coming, too.

Mr. EVELAND. Thank you, Mr. Chairman.

Mr. MCEWEN. Thank you, Mr. Chairman. You are very kind.

[Mr. Eveland's prepared statement follows:]

TESTIMONY SUBMITTED TO THE
SUBCOMMITTEE ON RURAL DEVELOPMENT,
AGRICULTURE, AND RELATED AGENCIES
HOUSE APPROPRIATIONS COMMITTEE

BY CLIFFORD N. EVELAND, II
MAYOR, WILMINGTON, OHIO

Mr. Chairman and Members of the Subcommittee, I thank you for this opportunity to appear before your Subcommittee to testify in support of the Water and Sewer Grant program.

I appear before you today to respectfully request that the Congress continue to fund the Water and Sewer Grant program at levels above $200 million dollars for Fiscal Year 1991. The need of our nation's rural communities for clean potable water and the government's assistance toward that end far exceed the level requested in the President's Budget. I support the continued funding of the Water and Sewer Grant program at or above the FY 1990 level of $209 million dollars, because only through such expanded availability of funds will my community and our surrounding counties be able to obtain Federal assistance for a critically needed water treatment facility.

Wilmington, Ohio is located in Clinton County in the southwestern corner of the State, in the middle of a triangle formed by Dayton, Cincinnati, and Columbus. With a population of 10,400 people, Wilmington is the largest city within a largely rural, agricultural region. The recent development of a national service industry -- the main hub for Airborne Express at the deactivated Clinton County Air Force Base -- as well as the growth of other industries and housing has strengthened our local economy; we are not experiencing a loss of population nor jobs. Many of those in our labor force work at the Industrial Air Park which houses Airborne Express. A majority of the workforce is drawn from the five counties which surround us. The increased demand for water has pushed our current facilities, which are quite old, to the limit. In fact, resources for future raw water supplies are quite limited throughout the entire southwest Ohio region.

In 1976, a study was provided by the Ohio Department of Natural Resources (ODNR) titled, "Southwest Ohio Water Plan." Due to the general lack of available groundwater, quality problems associated with small streams, and the lack of high sustained stream flows, the study recommended the use of Caesar Creek and East Fork Reservoirs ad the source for regional water supply. These two systems would serve 22 existing and one new public water systems, as well as a large number of rural water users.

The City commissioned the professional engineering consulting firm of Floyd Browne and Associates of Marion, Ohio to compile a comprehensive plan for the acquisition of water from Caesar Creek Reservoir, in accordance with the Southwest Ohio Water Plan. The recommendations of the study were as follows:

1. Design/construct a new 4 million gallon/day (mgd) water treatment plant near the intersection of S.R. 73 and the Clinton County line. The plant will be of modular design, to allow for expansion in 2 mgd increments.

2. Design/construct a new 20 mgd raw water intake structure along old State route near the village of Harveysburg.

3. Design/construct a new 36 inch raw water intake line between the new intake structure and raw water pump station.

4. Design/construct a new 24 inch raw water transmission line between the raw water pump station and proposed WTP.

5. Design/construct a new 12.5 mile, 24 inch treated water transmission line from the proposed WTP to the City of Wilmington's existing system; this line will have a 20 mgd capacity.

6. Connections to the public and private water companies should be made using master meters: agreements with these users should be initiated as soon as possible.

We are complying with these recommendations as best we can. A grant from the Farmers' Home Administration will help us to reach full compliance.

BACKGROUND

Clinton County, Ohio

Clinton County, population 34,000 (1980 census) is located in southwest Ohio near the center of a triangle formed by Cincinnati, Dayton and Columbus. To the south and east are the much more sparsely populated, primarily rural areas of southern Ohio including the Appalachian district of the State. More than one-third of the County's population is located in the City of Wilmington and the surrounding township, Union township.

The economy of Clinton is a careful dichotomy between agricultural and manufacturing and related industries. Approximately 30 percent of all residents in Clinton County according to the 1980 U.S. Census are employed in manufacturing and related industries. In 1987 Ohio Industrial Directory indicates that such industries in the county employ approximately 5300 persons. The Directory indicates that there are

approximately 40 additional industries in the county generally with less than 100 employees. Importance of Agriculture

Agriculture also plays an important role in the economy of Clinton County and the surrounding region, although a general decline in the farm based economy has forced many to seek part-time employment in local industry. A summary of selected agricultural statistics, as derived from the 1982 Census of Agriculture, indicates that the number of farms, the total amount of land in farms and the number of hired farm workers are all declining, both in Clinton County and for Ohio as a whole. Interestingly, it shows that most of the farm operators also work elsewhere at the same time as operating their farms. However, the data shows that agriculture is a major economic contributor to the people and business of the County and is continuing to grow in economic value.

A Clinton County farm on average, produces 20 percent more than the average farm in the State: $83,783 to $73,850 in 1982. Crops account for approximately 65 percent of the County's agricultural production value. Corn accounted for approximately 55 percent of the value to crops and soybeans another 35 percent. Hogs and pigs accounted for 73 percent of the value of livestock sales. Clinton County has frequently been one of the State's largest producers of both corn and hogs. The average size of a farm in Clinton County was 332 acres in 1982.

The following table displays the rural nature of our region. The figures for manufacturing jobs in Clinton County are a little misleading, because (1) the many people filling the jobs are farmers relying on their jobs for a secondary income, and (2) many of them are drawn from the surrounding counties (not Clinton County residents).

MANUFACTURING JOBS PER 100 POPULATION
CLINTON COUNTY, SIX NEARBY COUNTIES
AND STATE OF OHIO, 1986

	1985 Population Estimate	1986 Manufacturing Employees	MFG Employees Per 100 Population
Clinton County	34,700	5,302	15.3
Nearby Counties			
Brown	34,000	1,208	3.6
Clermont	138,800	6,879	5.0
Fayette	27,500	3,408	12.4
Greene	129,900	6,261	4.8
Highland	34,500	2,590	7.5
Warren	103,700	7,195	6.9
State of Ohio	10,743,944	1,261,487	11.7

SOURCE: OHIO MANUFACTURER'S INDUSTRIAL DIRECTORY, 1987, AND CALCULATIONS

Increasing Need for Water

With increasing population and economic activity and with strong pressure to meet standards set by the Ohio Environmental Protection Agency for improved quality wastewater treatment, sanitary sewer improvements are needed in Clinton County.

Currently, there are six community water supply, treatment and distribution systems in Clinton County. Additionally, there are three rural regional systems. Water supply is a very critical problem in the area because of the small drainage areas of the streams and because of the serious lack of underground water. Although several regional systems with water sources from outside the County are helping to alleviate the problem in the southern parts of the County, a major new source of water is needed for the central and northwestern part of the County. The need is especially critical in the Wilmington area in order to allow the community to meet its needs and its economic growth potential. Such growth potential includes the dynamic potential of Airborne Express Inc. and the Wilmington Industrial Air Park. The most appropriate source for obtaining a large new water supply is Caesar Creek Reservoir, approximately 12 miles northwest of the City, primarily located in Warren County.

The City of Wilmington's water system currently obtains its raw water from Cowan Creek south of the City and is stored in two upground reservoirs with a combined storage capacity of 450 million gallons. From there it is pumped to the treatment plant, which has been upgraded to allow for a capacity of 2 million gallons per day. The water is then distributed to four elevated storage tanks around the City with a combined capacity of 1.5 million gallons per day. However, this meets only Wilmington's most immediate needs.

Caesar Creek Lake

The water source for this project is Caesar Creek Lake, which is located approximately 12 miles northwest of the City of Wilmington. The lake was built by the U.S. Army Corps of Engineers in 1978 and is currently leased to the Ohio Department of Natural Resources. The lake was originally authorized as a flood control project under the flood Control Act of June 22, 1938, then reauthorized under the Water Supply Act of 1958 to include water supply and water quality. The lake now operates for flood control in the valleys of Caesar Creek and the Little Miami River, and is a unit in the comprehensive plan for the Ohio River basin for storage of water as water supply, water quality control and recreation.

The man-made lake has a drainage area above the dam of 237 square miles and is one of the deepest lakes in Ohio having a maximum normal pool depth exceeding 110 feet. The drainage basin is characterized as agricultural and rural type growth.

Through an Economic Development Grant, we plan to tap the water supply of Caesar Creek Lake and provide treated potable water not only to the City of Wilmington, but to the surrounding area as well, through a regional water system. Since the City of Wilmington is organizing the effort to develop the Caesar Creek Water Supply, the water treatment project is referred to as the Wilmington Regional Water Treatment Facility.

The existing city water treatment plant will be phased out when the regional treatment plant is built, start-up is complete, and the new plant is fully operational.

The total cost of the new facility will be $8.5 million dollars. We understand the matching requirement for Federal Grants, and we plan to furnish the 25% local share.

The city meets all the criteria for this program. We will soon submit an application to the Farmers Home Administration for Water and Sewer Grant Funds, but we do not expect to have a competitive position for these scarce funds until Fiscal Year 1991 funds become available. For these reasons, we are requesting that the Subcommittee:

(1) Continue to fund in FY 1991 the Water and Sewer Grant Program at the maximum feasible levels; and

(2) Encourage the Framers Home Administration to review favorably the grant application for a water treatment facility for Wilmington and Southwestern Ohio.

Mr. Chairman, this concludes my statement. Thank you for this opportunity to appear before you and the Members of this Subcommittee to present my testimony.

THURSDAY, MARCH 29, 1990.

TREE PLANTING INITIATIVE

WITNESSES

BENJAMIN C. BOLUSKY, AMERICAN ASSOCIATION OF NURSERYMEN
DUANE JELINEK, DIRECTOR OF HORTICULTURAL RESEARCH

Mr. WHITTEN. Mr. Ben Bolusky is our next witness.

Mr. BOLUSKY. Thank you, Mr. Chairman. I am Ben Bolusky, Director of Government Affairs for the American Association of Nurserymen. I am accompanied this afternoon by Duane Jelinek, who is our Director of Horticultural Research. It is a delight to be with you once again this afternoon and we welcome this opportunity to present the nursery industry's views regarding the 1991 budget for the U.S. Department of Agriculture.

You have our written statement. I ask that it be included in the record in its entirety and I would be happy to summarize for you.

AAN, as you know, is the national trade association of the nursery and landscape industry, representing all aspects of environmental horticulture, nursery crop farmers, landscape specialists, and garden center retailers. By almost any standard our members are primarily family farms and small businesses.

USDA's Economic Research Service estimates farmer cash receipts of environment horticulture and floriculture crops in 1988 at $6.9 billion, and the demand continues to increase dramatically.

In fact, the growth rate in number of companies and farms in the nursery and greenhouse industry is one of the highest in U.S. agriculture—at least 10 percent annually, or nearly twice the pace of the general economy.

The industry accounts for approximately 10 percent of all farm crop cash receipts, ranking third behind soybeans and corn in plant crops, and accounts for more farm receipts than wheat or cotton.

Total consumer expenditures in 1988 for U.S. floriculture and environment horticulture products were approximately $27 billion, and this figure excludes landscape services and all of its related labor.

Mr. Chairman, I would like to bring to your attention that AAN applauds the Administration's commitment to the nationwide tree-planting initiative, America the Beautiful. In our testimony before the Senate Appropriations Subcommittee earlier this month AAN strongly urged Congress to approve the America the Beautiful initiative under the jurisdiction of the U.S. Forest Service at its proposed full funding level of $175 million for fiscal year 1991.

Statistics show that the import/export ratio of nursery greenhouse products has increased from 3.3 to 5.6, which represents a 70 percent deterioration in domestic potential in four years. Productivity must increase dramatically for the industry to achieve and maintain a competitive edge in a market with strong expansionary potential. Automated systems and materials handling are the most feasible long-term solution to this growing labor problem. It is believed that automated plant handling systems would reduce labor costs by one-third and other operating costs by about 15 percent.

The program would be shared by the Agricultural Research Service and then with the full compliance of ARS staff in cooperation with the Cooperative State Research Service. AAN is thus requesting $2.05 million in new funds for fiscal year 1991 to support this research program.

AAN wishes to thank Congress for appropriating money last year for the establishment of a nursery crop research station under the auspices of Tennessee State University. AAN respectfully requests $770,000 for fiscal year 1991 to further the construction phase of the nursery crop research station.

The IR4 program is vital to our industry. AAN is very appreciative of Congress having provided the first increase in six years to this program's budget for fiscal year 1990; however, the necessity to re-register all pesticides, plus new registrations, will require considerably more funds. The CSRS' IR4 program must be sufficiently funded to eliminate the accumulated multi-year backlog in pesticide registrations for environmental horticulture crops and must accommodate the necessary research for the re-registration of 1,000 uses plus 200 added annually to the system.

AAN requests that Congress supports the Administration's proposed increase, as well as provide an additional $4.2 million to CSRS' fiscal year 1991 pesticide clearance program.

AAN also urges this committee to allocate an additional $1.2 million to the Agricultural Research Service for its pesticide clearance research program.

The nursery and landscape industry is turning increasingly towards integrated pest management systems. AAN has endorsed H.R. 3514, the Integrated Pest Management Research Act. We believe strongly that there must be a recognized balance between the diminishing availability of effective pesticides, on the one hand, and pest treatment needed to meet a myriad of regulatory requirements such as quarantines affecting interstate shipping.

The State governments and Federal agencies must modify their respective regulatory requirements by incorporating integrated pest management systems and/or biological controls.

The Federal quarantine program under APHIS is vital. AAN strongly supports APHIS' request for adequate funds to prevent the introduction of additional foreign pests into the United States, as well as to prevent the spread of certain already-established pests here. To do otherwise will result in a significant reduction in agricultural productivity and a similar increase in production costs.

AAN strongly supports funding for the new APHIS National Plant Germplasm Quarantine Center at Beltsville, Maryland. Serious inadequacies at the outmoded facility at Glendale, Maryland, as well as the increasing need to introduce plant germplasm into the U.S., underscore the need for this new facility. AAN respectfully urges favorable consideration of the Administration's fiscal year 1991 proposal of $12 million for the first phase of construction.

As in past years, Mr. Chairman, AAN truly appreciates the gracious opportunity you have given us to present to this committee the nursery industry's views with respect to agricultural research. Through the years, Mr. Chairman, your friendship has meant a great deal to the American Association of Nurserymen.

On behalf of the nursery and landscape industry we would like to say thank you.

Mr. WHITTEN. Thank you very much. You have heard the statements we have made. We have our problems here. I don't know what we will be able to do, but we do appreciate your appearance.

Mr. BOLUSKY. We appreciate all that you do.

[Mr. Bolusky's prepared statement follows:]

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AMERICAN ASSOCIATION OF NURSERYMEN

1250 I STREET, N.W. · SUITE 500 · WASHINGTON, D.C. 20005 · 202/789-2900

Statement of the
American Association of the Nurserymen
before the
Subcommittee on
Agriculture, Rural Development
and Related Agencies
Committee on Appropriations
United States House of Representatives
March 29, 1990

Mr. Chairman, the American Association of Nurserymen (AAN) welcomes this opportunity to present the nursery industry's views regarding the Fiscal Year 1991 budget for the U.S. Department of Agriculture (USDA). AAN is the national trade association of the nursery and landscape industry. We represent 4,000 firms across the country engaged in all aspects of environmental horticulture -- nursery crop farmers, landscape specialists, and garden center retailers. By almost any standard, our members are primarily family-owned farms and small businesses.

USDA's Economic Research Service (ERS) estimates farmer cash receipts of environmental horticulture and floriculture crops in 1988 at $6.9 billion ... and, the demand for nursery, floral, and other environmental horticulture crops continues to increase dramatically. In fact, the growth rate in numbers of companies in the nursery/ greenhouse industry is one of the highest in U.S. agriculture -- at least 10% annually, or nearly twice the pace of the general economy. The industry accounts for approximately 10% of all farm crop cash receipts -- ranking third behind soybeans and corn in plant crops. The nursery/greenhouse industry also accounts for more farm receipts than wheat or cotton.

An ERS analysis estimates that total consumer expenditures in 1988 for U.S. floriculture and environmental horticulture products in 1988 were approximately $27 billion. While all greenhouse and nursery products such as trees, flowers and other plants, bulbs and seeds were included in this figure, it excludes landscape services, related labor and material and product resales and accessories. Comparatively, total consumer expenditures for fresh produce in 1988 were estimated at $37 billion. Consumer spending for floral and potted plant items in the U.S. increased an inflation-adjusted 46% in 1988 over 1982.

The rising population, changing lifestyles and higher disposable incomes all are encouraging increased consumer demand for nursery/greenhouse products. In addition, heightened environmental concerns by government and industry (e.g. President Bush's "America the Beautiful" initiative to plant one billion trees in city landscapes and rural settings) will further increase demand for our industry's products.

In view of the increasing demand for the nursery industry's products, and to ensure that nursery plants are continually available to improve the quality of our environment and save valuable natural resources, AAN has graciously been invited by this Committee each year to submit testimony highlighting important areas of research which require the immediate and serious attention of this Committee -- and Congress as a whole.

At the same time, the nursery industry is committed to a significant reduction in the federal deficit as AAN members understand the deficit's potential danger to the nation's economy. To its credit, and unlike so many other agricultural segments, the nursery industry does not receive, and does not want, any federal subsidies or similar support. Yet, it believes in the critical need to maintain the integrity of federal research programs vital to American agriculture. You will note that AAN's recommendations reflect careful study and propose modest increases at best. We believe that the federal

government's contribution to research is a reasonable expenditure of federal funds. Thus, AAN urges Congress to provide the critical funding as outlined herein.

First, AAN wishes to thank the Committee for its $400,000 appropriation in FY90 for a study to compile the methods used by foreign countries in protecting their domestic agriculture. The information resulting from this study should be very helpful when considering possible future revisions to Quarantine 37. For biological reasons, and to protect American agriculture, this quarantine regulates importation of plants in growing media into the United States. Since those revisions are expected to be published for comment in late 1990, it is our desire to see the results of this study published as expeditiously as possible.

National Initiative for Research on Agriculture, Food and Environment

AAN supports the proposed National Initiative for Research on Agriculture, Food and Environment at $100 million. AAN understands that these funds would be channeled into competitive grants for the study of a wide range of complex agricultural problems. Our only reservation in supporting this proposal is the need for some of this funding to be used to strengthen "core" research programs -- not just to be used towards competitive grants. What we mean by "core" programs are the on-going programs at both federal laboratories and state universities. Many of these need to be continued and strengthened through additional funding.

Water Quality

AAN supports the proposed $52.2 million increase to continue and expand water quality programs originally funded in FY90 as part of a coordinated government-wide initiative. In fact, AAN's goal is to establish the nursery industry as the champion of prudent water use. USDA water quality research programs will assist us in this endeavor. Likewise, H.R.3574 and S.2024, introduced by Representative Fred Grandy (R-IA) and Senator Tom Daschle (D-SD) respectively, would improve groundwater policy coordination within USDA. H.R.3574 and S.2024 would not only improve USDA coordination of its groundwater policy, research and education efforts, but the bills also recognizes that groundwater problems are site specific, and that research and education policy must address the needs of individual groundwater situations. AAN agrees with the thrust of H.R.3574 and S.2024 insofar as they instruct the research community to design "...a systems solution to production and groundwater protection."

"America the Beautiful" Initiative

AAN applauds the Administration's commitment to a nationwide tree planting effort as part of a major new environmental initiative -- "America the Beautiful." We believe that as a tree planting, maintenance and improvement program, "America the Beautiful" offers individual citizens the opportunity and incentive to beautify the American landscape. "America the Beautiful" is much more than an aesthetic landscape project. It is proven that plants provide many tangible environmental, social, psychological, and economic benefits to society, as they: (1) clean the air by removing carbon-dioxide and certain air pollutants (2) reduce energy consumption by providing cooling shade, as well as shelter from the wind; (3) protect water quality by reducing soil erosion; (4) enhance wildlife habitats; (5) increase property values; and, (6) produce valuable wood products. In its testimony before the Senate Appropriations Subcommittee on Interior on March 7, 1990, AAN strongly urged Congress to approve the "America the Beautiful" initiative under the jurisdiction of the U.S. Forest Service at its proposed full funding level of $175 million for FY91.

Global Climate Change Research

The nursery industry is becoming increasingly concerned with potential effects on climate patterns which may result from increased concentrations of carbon dioxide in the atmosphere. All segments of agriculture, including landscape horticulture and forestry, could be affected by shifts in temperature and rainfall. The prospect of global climate changes holds dramatic public policy implications with respect to environmental and energy

policies. Trees and plants represent a very low-cost means for significantly reducing energy consumption and carbon dioxide build-up which may be factors contributing to any potential global climatic changes. It is for these reasons that AAN supports the Administration's proposed $26.2 million in FY91 funding for proposed USDA global climate change research and data analysis programs.

Agricultural Research Service

AAN wishes to thank the Administration and Congress for their continued and increased support of the Agricultural Research Service (ARS), particularly its Plant Science research and its programs on plant productivity affecting environmental horticulture crops. AAN also appreciates, that sufficient funds were appropriated in FY90 for the U.S. National Arboretum to acquire and install compactors which provided for sorely needed office and laboratory space for both professional and support staff.

Automated Plant Handling Systems Research

Despite successes in its growth rate, both in terms of number of companies and increasing sales, the nursery/greenhouse segment of American agriculture faces many obstacles. It is realizing a progressively smaller share of the vastly expanding U.S. "appetite" for environmental horticulture products. Statistics from the USDA-ERS Foreign Agricultural Trade Division show that the import/export ratio of nursery/greenhouse products has increased from 3.3 in 1983 to 5.6 in 1987 -- a 70% deterioration in domestic potential. United States producers also depend on plant handling techniques that are very intensive in terms of labor and resources. Labor and other resource costs in the U.S. are usually greater than those of its competitors in the global market. For example, payroll accounts for 34% of the typical nursery crop farmer's revenue. In fact, approximately 75% of their employees are hired on a hourly wage or piece-work status, a reflection of the manual nature of the industry's workforce. Labor shortages during peak production periods are becoming increasingly acute, particularly in certain areas of the country. Productivity per worker must increase dramatically for the U.S. environmental horticulture industry to achieve and maintain a competitive edge in a market with strong expansionary potential, both domestically and globally. Automated systems and materials handling are the most feasible long-term solution to this growing labor problem.

A recent survey of U.S. industry leaders confirmed the consensus that the U.S. industry's status in plant handling systems is either "average" or "deficit" when compared on a global basis. A very strong opinion prevails that the U.S. nursery industry should be "most advanced" and that "investing in research and development" was preferred to "buying technology from other countries." Survey respondees believe that automated plant handling systems would potentially reduce labor costs by one-third and other operating costs by about 15%. They also estimate 25-35% increases in productivity as well as industry expansion potentials of 20-25% over current production levels by incorporating automated plant handling systems into their production process.

Unfortunately, neither the federal government nor the nursery industry has been assertive in the research and development needed to achieve operational automated plant handling systems to address decreasing labor availability. As a result, AAN proposes that funding of an automated plant handling systems research program be shared by the Agricultural Research Service (ARS) in cooperation with the Cooperative State Research Service (CSRS). ARS would detail six scientist years to the program at a cost of $200,000 each. CSRS would support 15 projects annually at $50,000 each. In addition, it is proposed that the program begin with an international conference inviting world leaders and researchers in automated plant handling systems for the environmental horticulture industry to discuss technology status and opportunities. AAN is thus requesting $2.0 million in new funds for FY91 to support this automated plant handling systems research program including the international conference.

Professional Staff

AAN has long believed that ARS needs to strengthen and reinforce existing nursery crops research programs, but not at the expense of traditional research positions. This would

involve integration of an interdisciplinary approach to research involving environmental horticulture products --plants which improve and enhance the quality of man's environment.

AAN urges the addition of $300,000 to the proposed ARS Plant Science budget to ensure that additional professional staff such as an entomologist, a plant physiologist, and curators are added to appropriate ARS staff.

Pesticide Clearance

The Inter-Regional Project #4 (IR-4) has greatly assisted the environmental horticulture industry's efforts to obtain more prompt pesticide registrations for minor use crops when such pesticides are already registered for use on food or feed crops. These pesticides are absolutely essential for nursery crop farmers to comply with state and federal regulations which require interstate shipment of nursery crops to be 100% pest-free. Since nursery farmers must have these quarantine pesticides available, ARS needs to continue its pesticide clearance program research activities. However, the Congressionally mandated changes to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), requires the reregistration of all pesticides. Since the number of research trials funded in the ornamental horticulture area has decreased dramatically over the last several years as a result of reduced funding, this reregistration requirement will exacerbate an already bad situation. AAN strongly urges this Committee to allocate an additional $1.2 million for the Agricultural Research Service to use for its pesticide clearance research program.

Japanese Beetle

Of acute interest to the nursery industry is continued pesticide research on Japanese beetle control on field-grown and container nursery stock for certification and export to Canada. Since the 1979 loss of chlordane for treatment and certification, about $100 million in plant sales to Canada have been lost because U.S. nurserymen cannot safely and economically meet quarantine requirements.

AAN wishes to thank ARS for research conducted in 1988 and 1989 with the bendiocarb and isazophos pesticides for beetle control in field grown plants. We understand this research will continue in 1990-91. However, research is desperately needed in several other critical areas, including container plant treatments; pesticide injection and drenching as alternate treatment methods; as well as testing and clearance of new pesticides. For example, bifenthrin, a synthetic pyrethroid, shows potential for Japanese beetle control, but requires additional research. AAN implores this Committee to provide adequate funding to ARS to maintain current efforts and to pursue these additional research needs.

Germplasm Program

As mentioned earlier, AAN supports the increase in the ARS Plant Science research funding. AAN understands this includes an additional $2.2 million to strengthen the plant germplasm system to assure the availability of genetically diverse germplasm to address continually changing threats to crop production. AAN supports these additional funds provided that a proportionate share is used to support the recently created germplasm repository for woody landscape plants at the U.S. National Arboretum.

Whitefly Research

The sweet potato whitefly is a serious pest of cultivated crops in many areas of the world and much of southern North America. In Florida in 1987, the sweet potato whitefly became a problem in the production of nursery and floral crops, squash, melons, and tomatoes. It is estimated that in 1988 the tomato industry alone suffered $30 million in damage as a result of this pest. Major losses also occur in cotton, especially in California and Arizona. As a result, a national coalition of growers/producers of agronomic and horticultural crops recently met with ARS representatives and developed a comprehensive research approach to address the problems to environmental horticulture crops posed by the sweet potato whitefly and other pests such as the ash whitefly.

The program calls for a multi-faceted approach including biocontrols, host plant resistance, insecticides, as well as conducting basic biological studies of the pest. The research program would be coordinated by ARS in conjunction with various university

researchers in the states of Arizona, California, Delaware, Florida and Maryland. AAN supports additional funding of $1.5 million in the ARS FY91 budget to support this whitefly research program.

Cooperative State Research Service (CSRS)

Nursery Crop Research Station (Tennessee)

AAN wishes to thank Congress for appropriating $250,000 in FY90 for the establishment of a Nursery Crop Research Station in Warren County, Tennessee. Partly as a result of the FY90 appropriation, the project became eligible to receive $350,000 from the State of Tennessee. This combined seed money provided the critical start-up funds for the planning and construction of the station under the auspices of Tennessee State University. The station will address national research problems affecting environmental horticulture. Some of the anticipated research priorities include: (1) genetic enhancement of nursery crops; (2) research and development of nursery crop varieties that are resistant to nematodes; (3) research and development of longrange plant breeding programs and effective integrated pest management; (4) testing and evaluating new germplasm presently available through the U.S. National Arboretum; (5) research on stress tolerance in plants (i.e. cold weather, drought and pests); and, (6) research on drip and other irrigation systems appropriate for use and adaptation in the nursery industry. AAN respectfully requests $770,000 for FY91 to further the construction phase of the Nursery Crop Research Station. Such funds are critical and would be earmarked towards the construction of the necessary laboratories, offices, greehnouses and equipment sheds.

State Agricultural Experiment Stations (SAES)

Working cooperatively with ARS and the U.S. Forest Service, SAES addresses the local, regional and national research needs of agriculture. It is for these reasons that AAN continues to support this important research program. However, its effectiveness since 1980 has been jeopardized by the erosion of its funding base -- Hatch Act Formula Funds. For example, the FY90 budget was only 0.02% over that of FY89. Moreover, only a $3.5 million increase, or 2.2%, is proposed for FY91. Considering the value received from research developed by CSRS, AAN supports the Experiment Station Committee on Organization and Policy's (ESCOP) recommended increase of $11 million, or 7%, to $166 million. AAN likewise urges SAES Directors to equitably fund research which is classified as "Research Program 3.15 - Plants to Enhance the Environment."

Special Grants

Pesticide Clearance

As mentioned earlier, the IR-4 program is vital to the environmental horticulture industry. AAN is very appreciative of Congress having provided the first increase in six years to this program's budget from $1.3 million to $1.975 million for FY90. AAN also thanks and supports the Administration's proposed increase to $3 million for FY91. However, as explained previously, the necessity to reregister all pesticides, plus new registrations, will require considerably more funds than this budget permits. Additional funding will also assure that chemicals used in non-food products are included in the Congressionally mandated reregistration of all pesticides.

The CSRS' IR-4 program must be sufficiently funded to eliminate the accumulated multi-year backlog in pesticide registrations for environmental horticulture crops. In addition, it must accommodate the necessary research for the reregistration of 1,000 uses and new registrations of nearly 1200 plus 200 added annually to the system. This will require an additional $4.2 million, or a total of $7.2 million, for the IR-4 program in FY91. AAN urgently requests that Congress support the Administration's proposed increase, as well as provide an additional $4.2 million to CSRS' FY91 pesticide clearance program.

Pesticide Impact Assessment

The pesticide impact assessment program is also very important to the environmental horticulture industry. AAN appreciates the increased funding in FY90 and we heartily support the proposed increase for FY91 to $2.968 million.

Integrated Pest Management Research

By its very nature, the nursery and landscape industry is committed to protecting and beautifying the environment. As a result, it is turning increasingly towards integrated pest management systems. AAN has endorsed H.R.3514, the "Integrated Pest Management Research Act" introduced by Congressman Charles Pashayan, Jr. (R-CA).

Yet as businessmen and women, the industry must abide by the proliferation of federal and state laws/regulations governing pesticide use. AAN strongly believes there must be a recognized balance between the diminishing availability of effective pesticides and pest treatments mandated to meet a myriad of regulatory requirements, e.g. quarantines affecting interstate shipping. In the hopeful event that H.R.3514 is enacted, AAN urges that a primary focus of the proposed Office of Integrated Pest Management be to work with the state governments and federal agencies to modify their respective regulatory requirements by incorporating integrated pest management systems and/or biological controls.

EXTENSION SERVICE

Representatives of the Extension Service provide invaluable assistance to the environmental horticulture industry and to the 69 million American households who participated in one or more types of indoor or outdoor lawn and garden activities in 1988. The Extension Service is a logical and invaluable point of dependability for those seeking information about producing high-value nursery crops. It also provides consumers with information on how to properly care for our industry's products so such may properly serve their function of enhancing the environment. In light of these benefits, AAN was pleased with the FY90 increase in the Smith-Lever 3(b&c) funds. Although AAN is also pleased to note the proposed increase for FY91, it is simply not enough. AAN supports a 7% increase, or an additional $13.5 million to $260 million for FY91.

Pest Management

AAN wishes to thank the Administration for proposing a $100,000 increase to $7.2 million for Extension Service Pest Management programs. However, AAN proposes an additional $300,000, a total of $7.5 million in FY91 for this important program.

Pesticide Impact Assessment

AAN appreciates the increase to $2.6 million in FY90 for this pesticide impact assessment program. AAN also supports the Administration's proposed increase to $3.6 million for this important Extension Service pesticide impact assessment program.

ANIMAL AND PLANT HEALTH INSPECTION SERVICE (APHIS)

Federal and State governments, as well as most foreign countries, have enacted quarantine laws to prevent the artificial spread of hazardous pests into their jurisdictions. In the United States, it is the responsibility of APHIS and various state departments of agriculture to promulgate and enforce such quarantines. The federal quarantine program is vital to all efforts to protect American agriculture. AAN strongly supports APHIS' request for adequate program funds to prevent the introduction of additional foreign pests into the United States, as well as to prevent the spread of certain already established pests here. To do otherwise will result in a significant reduction in agricultural productivity and a similar increase in production costs.

Japanese Beetle

APHIS has the responsibility to certify nursery crops free of Japanese beetle to meet quarantine requirements for shipment into Canada, which is the principal foreign market for U.S. grown nursery crops. Since the 1979 cancellation of chlordane for nursery uses, no practical or effective pesticide treatment has been available for nursery crops to satisfy Canadian and various state requirements. As previously mentioned, AAN strongly supports research to identify, register or label appropriate pesticides for Japanese beetle certification.

APHIS' role in coordinating certification procedures with Canada is equally critical. AAN is appreciative of APHIS' role in coordinating a series of meetings with Agriculture Canada to address this issue and AAN is pleased to represent the U.S. nursery industry at these meetings. AAN urges APHIS to further investigate potential certification components, including a sequential soil sampling method combined with nursery production practices that minimize pest risk, such as clean cultivation. Pursuant to the U.S./Canada negotiations, APHIS also needs resources to survey and determine the current extent of Japanese beetle infestation in this country. AAN respectfully requests this Committee to adequately fund and direct APHIS to continue to diligently pursue resolution of this eleven year-old problem.

Imported Fire Ant

In many cases, the pesticide needs of the nursery industry to meet international, federal and state quarantines have not been adequately fulfilled. To ensure that nursery crops are free of pests (such as imported fire ant), USDA must maintain a strong program of testing pesticides to determine whether they are effective for quarantine certification purposes. In October 1989, AAN learned that chlorpyrifos treatments approved for imported fire ant certification are not effective for the expected residual period. AAN supports the recommendations of the APHIS Technical Work Group on Imported Fire Ant to retain these treatments and increase inspection and detection measures. APHIS and ARS are urged to continue work to identify and evaluate potential new controls.

The imported fire ant poses a continual threat to agriculture in general, especially in uninfested states such as Arizona and California. AAN supports maintaining the imported fire ant program at FY90's funding level of $4.2 million to support these regulatory activities and additional methods development work so vital to preventing the spread of this destructive pest.

Gypsy Moth

Gypsy moth is a prime example of a pest which is not particularly damaging to nursery production. However, nursery businesses within gypsy moth-infested areas are restricted in marketing their crops to help prevent the spread of the pest to uninfested areas. As gypsy moth continues to spread to such areas, it is critical that APHIS increase inspection and monitoring of household articles, recreational vehicles and mobile homes. These -- not nursery crops -- are the primary vectors responsible for the long distance spread of the gypsy moth, therefore, such monitoring programs must be strengthened. To carry out these regulatory responsibilities, AAN supports the recommended FY91 budget increase of $300,000 to $4.9 million.

Golden Nematode

The golden nematode poses a threat to potato-growing lands both within and outside New York State, as well as to nursery production areas. Approximately 9,000 acres in nursery crop production could be affected by a lack of proper control of the golden nematode. AAN urges APHIS to continue the golden nematode program and to allocate funds necessary for this purpose.

Agricultural Quarantine Inspection

AAN commends APHIS for its innovative efforts to maintain and improve its effectiveness in preventing the introduction of foreign animal and plant pests into the United States. Port-of-entry inspections continue to be important deterrents against accidental introduction of such pests. In recent years, outbreaks of medfly, oriental fruitfly, ash whitefly, and citrus canker confirm that increased funding is necessary for APHIS to effectively prevent such pests from entering the United States. AAN thus supports the proposed budget of $75 million in FY91 for agricultural quarantine inspections. However, AAN strongly objects to the adoption of "user fees" to pay for this most important APHIS program. To levy fees on world-wide travelers for such a Federally mandated program would be inappropriate, and could set a bad precedent for future indiscriminate use of such fees. AAN thus urges Congress to fund in its traditional manner the APHIS Agricultural Quarantine Inspection program.

National Plant Germplasm Quarantine Center

AAN strongly supports funding for the new APHIS National Plant Germplasm Quarantine Center at Beltsville, MD. Serious inadequacies at the outmoded plant quarantine facility at Glenn Dale, MD, as well as the increasing need to introduce plant germplasm into the U.S. underscore the need for this new facility. Germplasm introduction of vegetatively propagated ornamental and fruiting plants (such as apples, pears, peaches, plums, grapes, and other crops) is vital to American agriculture--including nursery crop production. AAN respectfully urges favorable consideration of the Administration's FY91 proposal of $12 million for the first phase of construction.

Mediterranean Fruit Fly

During the summer/fall of 1989, several infestations of medfly were discovered in four California counties. These infestations are currently under eradication, but are severely taxing State and Federal control programs. AAN supports the proposed increase in FY91 funding to $10.4 million to continue control programs for this serious pest.

Witchweed

Witchweed is a parasitic plant which attacks corn, sorghum and other crops in the grass family. It is considered a serious threat to these crops, and though it does not directly affect most nursery crops, nursery farmers may nonetheless be affected by quarantines which restrict free movement of nursery plants from witchweed-infested areas. Witchweed's distribution in the U.S. is currently limited to parts of southeastern North Carolina and eastern South Carolina. State regulatory officials have stated that the ongoing witchweed control program has been very successful, and that witchweed can be totally eradicated within five years -- if adequate funding is allocated. Therefore, AAN strongly supports maintaining the witchweed program funding at least at the FY89 level of $5.281 million. Otherwise, progress made in recent years may be lost if funding is decreased. Moreover, the false economy created by a budget reduction may be offset by higher future program costs or loss of agricultural profitability if this plant pest spreads in an uncontrolled fashion.

The American Association of Nurserymen is a strong advocate of American agriculture. As fewer and fewer chemical pesticides are available for regulatory certification purposes, it is vital that APHIS maintain an active and highly visible role in plant pest control for the nursery industry and all of American agriculture.

As in past years, Mr. Chairman, AAN truly appreciates this opportunity to present to this Committee the nursery industry's views regarding to agricultural research. Thank you.

American Association of Nurserymen
FY91 Research Appropriations Testimony
Summary

Program	Support
National Initiative for Research on Agriculture, Food and Environment	$100 million
Water Quality	$52 million
America the Beautiful	$175 million
Global Climate Change Research	$26.2 million
Agricultural Research Service	
Automated Plant Handling Systems	$2.05 million additional
Professional Staff	$300,000 additional
Pesticide Clearance (IR-4)	$1.2 million additional
Japanese Beetle	*
Germplasm Program	$2.2 million additional
Whitefly Research	$1.5 million additional
Cooperative State Research Service	
Nursery Crop Research Station (Tennessee)	$770,000 additional
Hatch Act Formula Funds	$11 million additional
Pesticide Clearance (IR-4)	$4.2 million additional
Pesticide Impact Assessment	$2.968 million
Extension Service	
Smith-Lever 3(b&c)	$13.5 million additional
Pest Management	$300,000 additional
Pesticide Impact Assessment	$3.6 million additional
Animal & Plant Health Inspection Service	
Japanese Beetle	*
Imported Fire Ant	$4.2 million
Gypsy Moth	$4.9 million
Golden Nematode	*
Agricultural Quarantine Inspection	$74.969 million
National Plant Germplasm Quarantine Center	$12 million
Mediterranean Fruit Fly	$10.431 million
Witchweed	$137,000 additional

* While specific funding levels are not cited herein, AAN requests Congress to provide adequate FY91 funding to maintain current programs and pursue additional research needs.

THURSDAY, MARCH 29, 1990.

FOOD SAFETY—APHIS-TEAL

WITNESSES

JAMES B. GRANT, THE NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE

ROBERT AMATO, THE NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE

Mr. WHITTEN. Mr. James B. Grant is our next witness.

Mr. GRANT. Thank you, Mr. Chairman.

Mr. WHITTEN. We will be putting your complete statement in the record following your presentation. Please talk to me about the high points and conclusions.

Mr. GRANT. Yes, sir.

Mr. WHITTEN. We are going to have to be going to and from the House floor soon, and it will save some time.

Mr. GRANT. Thank you, Mr. Chairman. I am J.B. Grant, Executive Secretary of the National Association of State Departments of Agriculture. Accompanying me today is Mr. Bob Amato, my associate.

We are going to summarize, Mr. Chairman, and will ask that our full statement be made a part of the hearing record.

NASDA is delighted, Mr. Chairman, that the Administration is placing an emphasis this year on food safety. We have been working closely with the Department of Agriculture, the Environmental Protection Agency, and the Food and Drug Administration in an effort to establish a national council on food safety that would assure continued consumer confidence in the nation's food supply. We hope to have this Food Safety Council in operation soon.

We agree completely with the Administration on its new food safety initiatives for fiscal year 1991, including new moneys for the Agricultural Marketing Service of $15.8 million, the National Agricultural Statistic Service of $7 million, the Economic Research Service at $1.2 million, and Human Nutrition Information Service at $1 million.

Mr. Chairman, regarding the agricultural quarantine inspection program at APHIS, we again urge you to take a serious look at the proposal to establish user fees for this program.

NASDA's policy in the past has been to oppose user fees on Federally-mandated programs that tend to serve a broad constituency. This user fee precedent could set a bad example and lead to indiscriminate use of such a fee in the future.

We have been working very closely with the National Pork Producers Council on pseudorabies and agree that a substantial increase in funding is necessary for a comprehensive eradication program. We therefore urge the subcommittee to make $12.7 million available in fiscal year 1991 to begin carrying out a ten-year program.

On imported fire ant we believe that a minimum of $4.2 million in fiscal year 1991 is necessary to assist us at the State and Federal level to control these dangerous pests.

Pink bollworm, grasshopper, and mormon cricket—we urge you to continue at no less than the current estimated funding of fiscal year 1990.

Last year, Mr. Chairman, we came to you on another issue, the Russian wheat aphid. Again this year we strongly recommend that appropriated funds be allocated toward eradicating the Russian wheat aphid. NASDA has been taking a lead role in this issue over the last three years.

In 1989 the Russian Wheat Aphid Technical Advisory Group, established by NASDA, determined that 9.5 million per year for 10 years is needed to implement the essential components of this program. We continue to support this recommendation.

Integrated pest management—we recognize the tremendous importance of integrated pest management and we urge continued Congressional support for these programs and sufficient moneys to carry out expanded research and development.

IR-4 program—a number of people have articulated the need for this. We strongly support stable and adequate funding for this very important program.

In my introductory remarks I mentioned the food safety initiatives proposed by the Administration. One of those initiatives includes $15.8 million for the Agricultural Marketing Service to administer a national pesticide residue monitoring program. We believe such a program would greatly benefit the consumer and strengthen our food safety programs at both the State and Federal levels. We urge the subcommittee to fully fund this program at the requested level.

We are very pleased, Mr. Chairman, that the Administration has requested funding this year for payments to States' program—the first time since 1974, I think.

The wholesale market development program and the Federal Seed Act are also in the budget this year. We urge the committee to appropriate $1.8 million for the payment to States' program, $3 million for the wholesale market development program, and that the Federal Seed Act be funded at the level of $1.094 million in fiscal year 1991.

Mr. Chairman, we concur in the Administration's proposal of $81.4 million for the National Agricultural Statistics Service, $14.3 million above the fiscal year 1990 estimate. We believe it is very important that USDA be able to allocate additional moneys for data collection to initiate new analysis and expand existing analysis and data collection on the safety of the nation's food and water supply.

Increased funding for NAS would provide that agency with $7 million for a three-year cyclical survey of pesticide use data to complement States' data. We feel very strongly about every effort to beef up our food safety initiatives at both State and Federal levels.

In foreign market development, NASDA has been cooperating with the U.S. Department of Agriculture's Foreign Agricultural Service for many years in expanding our overseas markets. The biennial NASDA National Food and Agriculture Exposition is an excellent example. We provide American food and agriculture producers with a unique opportunity to sell U.S. food, beverage, seed, and nursery products to overseas buyers. It is a prime example of

what can be accomplished through a cooperative working arrangement between an agency of the Federal Government and the States. FAS has been an invaluable partner in this effort.

We urge the Congress to appropriate $115 million for fiscal year 1991, $11.5 million more than the Administration's request. We believe this increase is justifiable because of the many new responsibilities assigned to FAS in recent years through the passage of the Food Security Act of 1985 and the Omnibus Trade Bill of 1988.

We urge the Congress of the United States to reestablish the targeted export assistance program as we move through the 1990 Farm Bill.

TEA funds have enabled increased export promotion activities in areas where U.S. commodities have been adversely affected by unfair trade practices. We urge the subcommittee to appropriate $325 million for the TEA program, as called for in the 1985 Farm Bill.

We believe the success achieved by TEA justifies the moneys originally authorized because this program has been so successful. As we look to a 1990 Farm Bill we should give every consideration to a continuation of the TEA program.

Mr. Chairman, this briefly summarizes our rather lengthy statement. I thank you for the opportunity of being here today.

Mr. WHITTEN. Thank you very much for your presentation. I don't know what we will be able to do. Thank you for your appearance.

Mr. GRANT. Thank you very much, Mr. Chairman.

[Mr. Grant's prepared statement follows:]

Statement of
James B. Grant
Executive Secretary
National Association of State Departments of Agriculture
before the
Subcommittee on Rural Development, Agriculture
and Related Agencies
Committee on Appropriations
U.S. House of Representatives
March 29, 1990

Mr. Chairman and members of the Subcommittee, I am J.B. Grant, Executive Secretary of the National Association of State Departments of Agriculture. I am pleased to make this statement on behalf of our Association.

NASDA represents the Departments of Food and Agriculture in the fifty states and the U.S. territories of Guam, American Samoa, Puerto Rico and the Virgin Islands.

Cooperative Programs

NASDA and the state Departments of Agriculture have worked cooperatively with various agencies of the U.S. Department of Agriculture for many years. And our teamwork has paid off. Cooperative programs, jointly funded and jointly administered, are a cost-effective way of carrying out necessary government programs. They have proven successful and efficient over the years. We believe they must continue on a cooperative basis. However, some very important programs have been slated for drastic reductions or the imposition of user fees. Most of these programs are federally-mandated, consumer protection or service programs, many carried out cooperatively with states and industry.

The Administration tries to justify the cuts or user fees by saying that the states and/or industry will absorb these programs. This will not happen. The states and industry are in no condition to pick up these programs, nor should they have to assume total responsibility for federally-mandated programs. We respectfully request that Congress appropriate adequate and sufficient monies that will continue to allow the U.S. Department of Agriculture to fulfill its mandated obligation to American farmers, ranchers and to all American citizens.

Food Safety

NASDA is delighted that the Administration is placing an emphasis this year on food safety. We have been working closely with the Department of Agriculture, the Environmental Protection Agency and the Food and Drug Administration in an effort to establish a National Council on Food Safety that would ensure continued consumer confidence in the nation's food supply. We hope to have this Food Safety Council in operation soon.

We agree completely with the Administration on its new food safety initiative for FY 1991, including new monies for the Agricultural Marketing Service ($15.8 million), National Agricultural Statistics Service ($7 million), Economic Research Service ($1.2 million) and Human Nutrition Information Service ($1 million). I will be discussing these departments in more detail later in my testimony.

Agriculture Quarantine Inspection

As in Fiscal Year 1990, the Administration is again calling for total user fees in FY 1991 to fund the Agricultural Quarantine Inspection program. This would mean a shift of $75 million from appropriated funds to user fees. This would be an unprecedented move for this APHIS program. Although the user fee would be imposed on international travelers, we believe the subcommittee should carefully examine this proposal, as it did last year, before imposing user fees on a federally-mandated program. This user fee precedent could set a bad example and thus open the door to indiscriminate use of such a fee.

Pseudorabies

States, industry organizations and individual herd owners have been working with USDA for the past five years to eradicate pseudorabies in the United States. Although we have reduced the disease during this time, our work remains incomplete. For Fiscal Year 1991, USDA is proposing to reduce pseudorabies funding by $200,000 to approximately $3.1 million. We believe this is not justifiable. NASDA has been working closely with the National

Pork Producers Council on this matter and agrees that a substantial increase in funding is necessary for a comprehensive eradication program. We therefore urge the subcommittee to make $12.7 million available in FY 1991 to begin carrying out a 10-year eradication program.

Imported Fire Ant

The Imported Fire Ant continues to plague many of our farmers, yet the Administration is urging a reduction of nearly 65 percent from last year's current estimate. We believe a minimum of $4.2 million in FY 1991 is necessary to control these dangerous pests.

Pink Bollworm, Grasshopper and Mormon Cricket

Three other important programs, Pink Bollworm, Grasshopper and Mormon Cricket, have been targeted for reductions in FY 1991. The reductions would be disastrous for these programs. We urge you to continue at no less than the current estimated funding of Fiscal Year 1990--$1.3 million for Pink Bollworm and $8.5 million for Grasshopper and Mormon Cricket.

Russian Wheat Aphid

Again, this year, we strongly recommend that appropriated funds be allocated toward eradicating the Russian Wheat Aphid (RWA). This aphid is a very serious problem, one for which there is no short-term solution for wheat and barley growers in the southwest and west. If left uncontrolled, it can virtually destroy a major part of the Western wheat crop, to the detriment of our already hard-pressed farmers.

The Russian Wheat Aphid is an invading pest of wheat, barley and other small grains currently in 17 states (Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming) and in Canada. This pest has become a significant economic threat to agriculture, affecting wheat and barley. RWA can cause up to 70 percent yield losses in some areas. Yield losses and control costs exceeded $52 million in 1987, $120 million in 1988 and $130 million in 1989. Estimates of future damage are even greater as the pest becomes established and environmental conditions change to enhance severe aphid infestation.

In 1988, under the auspices of NASDA, a strategy, entitled the "National Russian Wheat Aphid Integrated Pest Management Program" (NRWA-IPM) was developed to reduce the economic losses in wheat, barley and other small grains caused by the RAW. We supplied members of this subcommittee with copies of a report on this program last year. An updated current report is attached for your use. A maximum redirection of resources has been made by both federal and state agencies, yet resources are inadequate to address this monumental pest problem in a holistic approach and timely fashion. An immediate need exists to implement the NRWA-IPM program.

In 1989, the Russian Wheat Aphid Technical Advisory Group determined that $9.5 million per year for 10 years is needed to implement essential components of the NRWA-IPM program. We supported this recommendation then, and we support it once more. Although the FY 90 appropriation allowed for partial implementation of research, an appropriation at the requested level for FY 91 is essential for timely development of control measures. A National Russian Wheat Aphid Steering Committee has been formed, as directed by Congress. This committee will provide cooperation and oversight for the U.S. Department of Agriculture and state programs.

Although we are aware of the severe budgetary restraints facing our country, we believe this appropriation would, in the long run, save American taxpayers hundreds of millions of dollars and perhaps save the wheat industry.

Other APHIS Programs

The Administration also is calling for reduction in other APHIS programs that we consider very important to agriculture. We therefore ask that you increase funding for the boll weevil program in FY 1991 to the current 1990 estimate of $12.8 million, $3 million above the Administration's request. For the Animal Health Compliance Enforcement program, we urge an appropriation of $14.6 million, approximately the same as the current estimate of $14.5 million. In addition, we support $9 million for the Import-Export Inspection program in appropriated funds only. We disagree entirely with the Administration's request for $2.2 million in user fees for this federally-mandated program. However, we support the Administration's request for $32.1 million for the Animal Damage Control program, an increase of $2.7 million over FY 1990.

Integrated Pest Management

Mr. Chairman, in regard to the various APHIS programs, NASDA urges that Integrated Pest Management be used as often as possible. We believe IPM is a good approach to ensure a healthy environment while, at the same time, keeping U.S. agriculture competitive. IPM is based upon sound biological and ecological principles. It is a pest populatin management system that uses all suitable techniques, such as natural enemies, pest resistant plants, cultural management and pesticides in a total crop production system to anticipate and prevent pests from reaching damaging levels. Equally important, IPM programs have a 15-year track record of siginficantly reducing pesticides and increasing net profit for American agriculture, while maintaining quality and yield. We urge continued Congressional support for these programs and sufficient monies to carry out expanded research and development.

IR-4 Program

IR-4, the national agricultural program for the clearance of pest control agents and animal drugs for minor uses, receives approximately 90 percent of its current operating budget of $2 million from PL 89-106 (Cooperative State Research Service Special Grants) funding. The Administration has recognized the need for an increase in funding for IR-4 and has proposed an increase of $1 million. However, this token addition does not approach the funding levels needed to provide IR-4 with the resources to meet the challenge of pest management on minor use crops. IR-4 needs stable and sufficient funding each year to (a) eliminate a backlog of 1200 priority potential pesticide clearance projects on food uses; existing funding permits completion of about 120 projects per year while IR-4 receives around 200 new requests per year; (b) maintain approximately 1000 key minor uses that may be lost in the next seven years during reregistration mandated by FIFRA 88; (c) properly fund research to establish biorational pest control agents for IPM compatible pest management practices on minor crops; and (d) reestablish the research to support pesticide registrations on ornamental commodities. We urge the subcommittee to establish proper stable funding for IR-4 to allow this program to operate effectively.

Agricultural Marketing Service

In my introductory remarks, I mentioned the Food Safety initiatives proposed by the Administration in which we concur. One of those initiatives includes $15.8 million for the Agricultural Marketing Service to administer a national pesticide residue monitoring program. AMS would enter into contracts with states to sample and test commodities within market distribution channels for pesticide residues. States with the highest production of fruits and vegetables would be encouraged to participate in 1991. NASDA believes such a program would greatly benefit the consumer and urges the subcommittee to fully fund this program at the requested level of $15.8 million.

We are very pleased that the Administration has requested funding for Payments to States program, the Wholesale Market Development program and the Federal Seed Act in FY 1991. It has been the practice of previous administrations to zero out funding for these programs. We believe these programs are necessary to support the overall basis of agriculture and have always maintained a vital cooperative endeavor.

We respectfully ask that the Payments to States program (Federal-State Marketing Improvement Program) be funded in fiscal year 1991 at $1.8 million, an increase of $550,000 from FY 1990. Thus far in FY 1990, 13 projects in six states have received grants totalling approximately $618,000. It is our understanding that additional projects will be funded in July and September. We applaud the subcommittee's continued interest in this valuable program. We believe these monies are effectively used by the states and the monies are matched by the states.

Another important program for states is the Wholesale Market Development program. We urge the subcommittee to fund this program at $3 million in FY 1991, $1.3 million over the amount requested by the Administration. We believe additional resources are needed to partly compensate for past inflationary erosion of the program's support base and to provide the additional means to address urgent research into maintaining efficient wholesale food marketing in our major urban and rural areas.

The Federal Seed Act was designed in part to ensure quality and prevent mislabeling of seed in interstate movement. We believe funding to support the Federal Seed Act is vital since states do not and cannot control interstate shipments on sales of seed. If seeds do not meet proper standards, the buyer has no recourse other than litigation. Not all states have strong or "powerful regulatory tools." The Federal Seed Act serves to balance these deficiencies between states. As is the case with many programs, the Federal Seed Act should be a strong base and support for individual states programs, which can be used by the states when necessary. Many states have small

seed producers who, because of the recognition of the Federal Seed Act of the United States, are able to participate in and sell seed in the international market. They are able to do so because the foreign countries recognize the Federal Seed Act of the United States as the dominant program.

The Conservation Reserve program (CRP) has significantly increased the purchase of seed from out-of-state producers in many states. Complaints about the quality and mislabeling of seed have also risen significantly. For these reasons, we very much need federal assistance to ensure compliance with the Federal Seed Act. Therefore, we urge you to appropriate $1.094 million in FY 1991 for the Federal Seed Act, the same amount approved in FY 1990 and requested by the Administration.

Human Nutrition Information Service

NASDA concurs with the Administration's request for a $1.7 million increase for the Human Nutrition Information Service to $10.7 million. $1 million of this money will be used to help implement the Administration's Food Safety Initiative. As one of the four lead agencies, HNIS will develop a linkage of food intake data on individuals through an expanded Food Grouping System with a new National Residue Data Bank (NRDB). This will incorporate the pesticide use data collected by the National Agricultural Statistics Service and the levels of pesticide residues on fresh and processed products collected by other agencies, states and organizations. This component of the Administration's Residue Exposure Assessment System would provide estimates of potential pesticide exposure levels for individuals. HNIS would adapt the approach used in the National Nutrient Data Bank, respected worldwide, increasing the NRDB.

Economics and Statistics

As I mentioned earlier, NASDA is in complete agreement with the Administration in support of new food safety initiatives. We therefore urge the subcommittee to appropriate $140.3 million for Economics and Statistics in FY 1991, as proposed by the Administration. Of this amount, we concur with USDA's proposals of $56.5 million for the Economic Research Service--$5.6 million above the current estimate for 1990, $81.4 million for the National Agricultural Statistics Service--$14.3 million above the FY 1990 estimate, and $2.4 million for the World Agricultural Outlook Board--$500,000 above the FY 1990 estimate.

We believe it is very important that USDA be able to allocate the $11 million it is requesting to initiate new analysis and expand existing analysis and data collection in the safety of the nation's food and water supply. In addition, the increased funding for NASS would provide that agency with $7 million for a three-year cyclical survey of pesticide use data to complement state data, $2.4 million to improve statistical sampling frames in order to enhance efficiency and quality of data colelction, $1.8 million to enhance data collection on agricultural labor and wage rates, and $3 million for increased program support costs and increased pay costs.

Soil Conservation Service

NASDA urges the subcommittee to appropriate at least $728 million in FY 1991 for the Soil Conservation Service, the same as the current estimate for FY 1990. We believe this is an extremely important program, and should not be reduced to $725.4 million, as proposed by the Administration.

Food Safety and Inspection Service

NASDA is pleased that the Administration has proposed an increase in the FY 1991 budget for the Food Safety and Inspection Service to $442 million. We support this $24 million increase over the 1990 current estimate of $417 million. We also concur with the Administration's request for $38.5 million for grants to states under the FSIS State Meat and Poultry Inspection program, an increase of $1.9 million the from FY 1990 current estimate. We believe the food inspection system in the United States to be the safest and strongest in the world, and it is important that we continue to give strong financial support to this system.

Foreign Market Development Program

NASDA has been cooperating with the U.S. Department of Agriculture's Foreign Agricultural Service for many years in expanding our overseas markets. The biennial NASDA National Food and Agriculture Exposition, an excellent example, provides American food and agricultural producers with a unique opportunity to sell U.S. food, beverage,

seed and nursery products to overseas buyers--thus helping to reduce deficits with our trading partners and making agriculture and the food industry in the U.S. more profitable. It is a prime example of what can be accomplished through a coooperative working agreement between an agency of the federal government and the states. FAS has been an invaluable partner in this effort. We urge you to appropriate $115 million for FY 1991--$11.5 million more than the Administration's request of $103.5 million for the Foreign Agricultural Service. We believe this increase is justifiable because of the many new responsibilities assigned to FAS in recent years through the passage of the Food Security Act of 1985 and the Omnibus Trade Bill of 1988.

Funds to support foreign market development must be maintained at an appropriate level to allow FAS to operate and staff its overseas offices and provide adequate resources to market cooperators. These offices must be capable of continuing and expanding their work in market research, efforts to break down non-tariff trade barriers, and provide U.S. companies with foreign sales leads. An FAS appropriation of $115 million would provide for an adequate foreign market development program.

Targeted Export Assistance

Overall market development activities have been enhanced by the Targeted Export Assistance (TEA) program. TEA funds have enabled increased export promotion activity in areas where U.S. commodities have been adversely affected by unfair trade practices. We urge you to appropriate $325 million for the TEA program, as called for in the 1985 Farm Bill. We believe the success achieved by the TEA program justifies the monies originally authorized. Congress has authorized TEA funds through FY 1990. Because this program has been so successful and as we look to a 1990 Farm Bill, we should give every consideration to a continuation of the Targeted Export Assistance program.

Export Enhancement Program

The Export Enhancement Program has been an invaluable tool in allowing our farmers to compete on a level playing field with our heavily-subsidized foreign competitors. We urge the subcommittee to appropriate $1 billion for EEP, an increase of $100,000 over the Administration's request and $444,000 over the current FY 1990 estimate.

Food and Drug Administration

Since 1973, the Food and Drug Administration has contracted with state Departments of Agriculture and other state agencies for the performance of food, feed and medical equipment inspections by state personnel. FDA contracts with states are funded through the agency's field operations budget. In FY 1990, this important program was funded at $5.4 million. We request that funding for FY 1991 be no less than last year.

Conclusion

In conclusion, Mr. Chairman, we feel that, after years of hardship, agriculture is now on its way to recovery. Farm debt levels are being reduced, and land values have stabilized. However, we still have a long way to go. Now is not the time to reduce or eliminate programs that are necessary to a viable agriculture. It is imperative that continuity of programs basic to agriculture be maintained, and the vital cost-sharing programs not be disturbed.

As you go about your sincere deliberations on the agriculture budget, I would like to state a long-standing policy of NASDA. We believe the federal deficit should be reduced and that the federal government, as we do in the states, should operate from a balanced budget. However, the federal budget cannot be balanced on the back of agriculture. We have consistently said agriculture is willing to do its part in reducing the national deficit, but should not have to take more than its fair and equitable share of those reductions.

Thank you for allowing me to appear before the subcommittee today. I would be glad to answer any questions.

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THURSDAY, MARCH 29, 1990.

AGRICULTURAL RESEARCH

WITNESS

HON. ROBIN TALLON, A U.S. REPRESENTATIVE FROM THE STATE OF SOUTH CAROLINA

Mr. WHITTEN. Next is the Honorable Robin Tallon.

We are glad to have you before us.

Mr. TALLON. Thank you so much, Mr. Chairman.

Mr. Chairman, as always, thank you for allowing me the opportunity to testify before you today. I have a longer statement for the record, so with that my remarks will be brief.

Mr. Chairman, I would like to ask unanimous consent also that a letter I have from Doctor Max Lennon, the president of Clemson University, in support of the national research initiative be included for the record, sir.

Mr. WHITTEN. We will be glad to have it.

Mr. TALLON. Thank you.

[The letter follows:]

CLEMSON
UNIVERSITY

PRESIDENT

March 20, 1990

The Honorable Jamie L. Whitten
Chairman, Appropriations Committee
2314 Rayburn House Office Building
Washington, DC 20515-2401

Dear Congressman Whitten:

Thank you for the opportunity to have these comments read by Congressman Robin Tallon of South Carolina. It would have been a special pleasure to personally convey them to you and your committee but out-of-country travel plans precluded such interaction.

As president of a land-grant university and co-chair of the USDA Research Policy Advisory Committee in the Competitive Grants Office, I ask the Appropriations Committee to approve the National Initiative for Research on Agriculture, Food and Environment (NRI). The $100 million level proposed for FY91 provides a much needed infusion of funds to apply advanced technologies to the solution of complex, vexing problems that face farmers, ranchers, and the consumers of agricultural products. However, a level of $150 million for FY91 is considered to be the funding level required to adequately address the myriad of problems that must be addressed to improve the productivity of our nation's agricultural and forestry industry, while ensuring minimum impact on the environment.

The NRI will provide funds to scientists at universities and Federal labs, private and nonprofit organizations. These funds will be awarded competitively to individual researchers and multi-disciplinary teams to ensure that the best science and technology is funded. The initiative will build upon the strengths of the Federal-State partnership for agricultural research and the FY91 budget reflects the importance of continuing and strengthening priority ongoing programs at both the Federal labs and the universities. Existing competitive grant programs will become an integral part of the initiative.

Funding will be available to land-grant and non land-grant universities and colleges. Ten percent of the funds will be directed to building the future competitiveness of smaller, less developed institutions. Both basic and applied research will be emphasized and will focus on solving the most challenging problems in the agricultural sciences. Problems with longer-term implications will be addressed as well as those which address current needs.

In summary, this initiative is critical to the future success of the nation's agricultural and forestry industry. Your favorable consideration of this important program will be appreciated by the agricultural community and the nation's consumers.

Regards,

Max Lennon
President

ML/nhd

cc: Congressman Robin Tallon

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Mr. TALLON. Mr. Chairman, I appreciate the difficulty of this committee's task in reconciling current budget realities with the needs of agriculture; however, all of us are grateful for your unfailing commitment to agriculture and your far-sighted work on its behalf.

Agriculture is the most rapidly-changing sector of our economy. Managing this change means maintaining a technological advantage through ongoing quality research.

I want to stress to you today my State's support for several important research initiatives.

First and foremost I want to express strong support for fiscal year 1991 appropriations for the South Carolina International Trade Development Center for Food, Fiber, and Natural Resources under public law 95-113.

The primary purpose of the Center, which is a joint effort among Clemson University, the University of South Carolina, and the Small Business Development Centers, is to increase international trade potential of area businesses.

The Center's efforts will include research on critically-needed information about new markets and products, trade barriers, foreign cultures, and export shipping of food, fiber, and natural resource products.

With the steadily eroding textile industry, our South Carolina economy is turning increasingly to forestry and other agricultural alternative products.

Members of the entire university system have met with business leaders across the State to discuss the research, marketing, and coordination potential for such a center. There is a great deal of enthusiasm in South Carolina for this project. I hope you will give us your full consideration, as you always do, Mr. Chairman.

Second, I want to reiterate our appreciation and support for the alternative cropping systems project which is jointly conducted by South Carolina, Georgia, and North Carolina. We are at a critical point with this program, which has been extremely successful. A major conference will be held this spring to transfer current information on alternative crops that can be economically produced in these States to potential buyers in the food industry.

In addition, several crops are being evaluated for further production management systems that will enhance their economic viability. With the demand for tobacco steadily declining, the need and impact of this project at its current level of funding has become increasingly important.

We have a number of preventative research needs which I have elaborated, Mr. Chairman, in my longer testimony, so I will just mention them here:

Peach tree short-life pest control for South Carolina fruit and vegetable production—gypsy moth and witchweed pose threats to South Carolina's fruit and vegetable industry. With your generosity, we made headway in reducing their stranglehold over our producers, but we need your continued help.

Finally, Mr. Chairman, I would like to encourage the committee to increase its support for the vegetable research facility at Charleston, South Carolina. The potential to grow vegetables with less pesticide use makes the work being conducted by USDA and Clemson in their vegetable labs in Charleston even more impor-

tant. The current facilities are so out of date that they border on being dangerous. Clemson and USDA are anxious to work together in a new, modern facility. Architectural and engineering studies have been done. They are ready and anxious to begin construction, so they are requesting $18 million, Mr. Chairman.

. Finally, Mr. Chairman, agriculture is slowly making a come-back after some of the most difficult years in memory. A great deal of the credit for that come-back rests squarely on the shoulders of your committee. We want to thank you and the committee staff for the excellent working cooperation we have had over the years.

Mr. WHITTEN. Thank you very much. We are mighty glad to have you here and appreciate your support of agriculture through the years.

Fewer and fewer people have a realization of not only the importance of rural areas and the farmer, but their tie-in with our national economy. I think we are waking up to it, but I hope we do it in time to save agriculture.

Thank you for your support. We appreciate your appearance.

Mr. TALLON. Mr. Chairman, as I always say every time I see you, we, in South Carolina, really appreciate you. Thank you very, very much.

Mr. WHITTEN. Thank you very much. It is a pleasure to work with you.

Mr. TALLON. Thank you.

[Mr. Tallon's prepared statement follows:]

Mr. Chairman, Mrs. Smith, thank you for allowing me to testify before you today.

I appreciate the difficulty of this Committee's task in reconciling current budget realities with the needs of agriculture.

However, all of us are grateful for your unfailing commitment to agriculture and your farsighted work on its behalf.

Agriculture is the most rapidly changing sector of our economy. Managing this change means maintaining our technological advantage through ongoing, quality research.

I wanted to stress to you today my state's support for several important research initiatives. I'll start with the big ticket items.

1991 appropriations for the South Carolina International Trade Development Center for Food, Fiber and Natural Resources under PL 95-113.

The primary purpose of the Center, which is a joint effort among Clemson University, University of South Carolina, and the Small Business Development Centers, is to increase the international trade potential of area businesses. Center efforts will include research on critically needed information about new markets and products, trade barriers, foreign cultures, and export shipping of food, fiber and natural resource products. Extension outreach programs will be developed to inform businesses of the opportunities in international trade.

Post-harvest technology such as packaging, quality, transport, and franchising will be emphasizing. Major commodities and products included in Center activities would be cotton, fibers, and textiles; southern pine and wood products; soft red wheat and products; selected fruits and vegetables; and other processed foods and products.

An international agribusiness studies institute will be formed to train industry leaders to foster future Center programs. Students and faculty at participating institutions will receive special training in international affairs related to their specific disciplines. The broad base of academic, government and industry programs represented in the Center will be a key to its success and long term viability.

the work foresters, farmers, textile plants, wood products industry, banks and shipping companies through its roots in science and the land grant university system. In many cases, the technical expertise to solve a problem is found only within the university system. Many agricultural marketing problems can only be solved by sophisticated applications of physics, chemistry, physiology, engineering and materials science. Agricultural producers, processors, and their organizations often lack the staff and resources to tackle complex marketing problems and have traditionally looked to land-grant institutions to meet their needs. Private consultants can take on assignments only if they offer the prospect of short-term profit; but the International Center can develop programs for the long-term benefit of the entire Southeastern agricultural industry.

South Carolina's textile industry has been hard hit by this decade's surge in textile imports. At the same time we are working to diversify an agricultural economy that is highly dependent on traditional crops such as tobacco. The International Development Center would be a much-needed incentive to South Carolina's economy. $1.2 million is needed to start up the South Carolina International Trade Center.

Secondly, I wanted to stress South Carolina's support of improvement of facilities located at the U.S. Vegetable (USDA Agricultural Research Service) Laboratory located in Charleston, South Carolina.

U.S. Vegetable Laboratory in conducting basic research in vegetable breeding and production. One of the primary missions has been to develop vegetable varieties with multiple resistance to diseases, nematodes and insects without chemical pesticides. Work is currently underway on varieties of tomato, watermelon, cantelope, green bean, southernpea, sweet potato, broccoli and peppers with resistance to one or more of the common insect, disease, and nematode pests that affect them. I think the recent public concern over the pesticide residues in fruits and vegetables makes the work in Charleston particularly relevant.

Examples of their discoveries include the Homestead tomato with resistance to fungal diseases, which has been the primary variety for the fresh market tomato industry in Florida and South Carolina for 25 years; and the Charleston Gray watermelon which is still the primary variety throughout the South and in many parts of the world. The benefit-to-cost ratio of the Homestead tomato and the Charleston Gray watermelon varieties has been estimated over 300:1. As a result of these and many other contributions, this laboratory has earned national and international status as a center for vegetable research.

Yet, the current facilities for the USDA and Clemson research centers are inadequate to say the least. Staff are housed in original 52 year old buildings, a surplus World War II building, trailers, and other scattered small buildings, all occupied at 133 percent of design capacity. The buildings are very old, very costly to maintain and occupy, and are inadequate for the modern biotechnology related research needed. As well, moving people and equipment betwee[illegible]hese buildings, along the heavily traveled highway, has created safety hazards.

Clemson University has made known to the Agriculture Research Service its interest in the proposed replacement facility. The synergism of joint programs between Clemson and USDA researchers will greatly enhance the efforts to develop new, disease and pest resistant varieties of vegetables. The improved vegetable research and production, with focus on the environment, health and nutrition should be of real benefit to farmers and consumers. Last year $1.01 million was provided for engineering plans. We are now at the construction phase and these costs are estimated to be $18 million.

Thirdly, the Alternative Cropping Systems Project is researching new and viable vegetable markets. The Land Grant universitiess in South Carolina, Georgia, and North Carolina are cooperating in this effort to provide the agriculture community with information on the economic and biological potential of producing and marketing vegetables for greater time and profitability.

This research has provided production possibilities for at least 11 vegetable crops along with appropriate economic analysis. The economic analysis involves market windows, marketing channels, locating packing sheds, cropping combinations, price variables, economics of size, and international trade possibilities.

The Alternative Cropping Systems Project is now at its most important phase- the implementation and distribution of results. Interest on the part of farmers and agribusiness firms.

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and report the results to producers, processors, and marketers. Several plans have been developed to provide programs to transfer knowledge and production and marketing to potential clientele. I would appeal to this committee to continue its commitment to this project of $270,000.

I'd like to move now to preventative research of critical importance to South Carolina. Peach tree short life continues to be the single most threatening disease problem for the peach industry in my state.

The major factor associated with the disease problem for the peach industry in my state. The major factor associated with the disease that can not be controlled is the ring nemotode, which severe affects young trees in sandy soils. Under your direction, a long range program has begun to indentify peach trees and closely related plants with resistance to ring nemotodes and have characteristics deemed desirable for rootstocks. Continued funding is needed to further develop promising leads for peach tree short life control.

South Carolina also depends heavily on funding to continue the erradication of gypsy moth and witchweed. In the past two years, the gypsy moth has attempted to establish a foothold in South Carolina. However, some time in the 1990s a wave of gypsy moths will invade the state that cannot be stopped. Research, extension and regulatory programs need to be established that will develop methods to control this pest by new means. A federal intergrated pest eradication program is needed.

Over 80 percent of its infestation has been eradicated in the past 15 years. The threat of federal fund withdrawal from the program and the reduction in the herbicides used to eradicate witchweed have jeopardized the success of this eradication program.

Another area of primary concern to my state is in forest productivity. The 182 million acres of timberland in the 13 southern states from Viriginia to Texas, are one of the nation's greatest resources, representing the primary basis of the forest products industry in the U.S. The need for the Southern Forest Productivity Program is critical now because many aspects of the timber, water, recreation, and other forest resource situation are disquieting: demands for timber removals are exceeding growth in some areas; conflicts among alternative forest uses are increasing; forest land is being lost to other uses; and funding and staffing for forestry research has declined.

The Forest Service developed, in collaberation with universities, industry and other institutions, a priority research program entitled the Southern Forest Productivity Program. This program was mentioned in the President's Budget for FY1988 and FY1989 without a clear explanation of the levels of funding and the mechanisms required to put the program into effect. I would appeal to this Committee to provide for FY1991 $2.1 million, the level the Forest Service recommended for start-up funding in FY1989.

Finally, I would like to reiterate South Carolina's support for the Gulf Coast Research Laboratory Consortium's U.S. Marine Shrimp Farming Program.

leadership in the field of aquaculture. Just a few years ago, our State significantly increased its investment in aquaculture with the construction and staffing of the Waddell Mariculture Center. The mission of this Center is to serve as an "aquaculture experiment station" for the state and to develop aquaculture as a viable commercial industry here.

Through research and extension activities of the Waddell Center and other institutions, several types of aquaculture appear to have good, near term potential in South Carolina. One of these is marine shrimp. The Waddell Center began research on intensive pond culture of shrimp just five years ago, and already their results are being successfully implemented in the private sector.

Several small shrimp farms are in operation, three or four more will being operations this year and others are seeking financing and land. Production has more than doubled, with about 360,000 pounds of shrimp produced from private farms in South Carolina last year.

Of major importance to the Waddell Center's shrimp aquaculture program has been the financial support and scientific exchange provided by the GCRL. This program through its support of research and demonstration activities at the Waddell Mariculture Center, has been a major reason for the investments in shrimp farming that are occurring in South Carolina.

establishment of a viable shrimp farming industry in South Carolina and other states, provide an important diversification option for coastal farmers and help the nation reduce its tremendous foreign trade deficit in seafood. I urge you to continue and expand support for this program.

Mr. Chairman, agriculture is slowly making a comeback after some of the most difficult years in memory. A great deal of the credit for that comeback rests square on the shoulders of this Committee. Thank you.

THURSDAY, MARCH 29, 1990.

USDA BUDGET

WITNESS

GRACE ELLEN RICE, AMERICAN FARM BUREAU FEDERATION

Mr. WHITTEN. Ms. Grace Ellen Rice?

I will ask you to touch the high points if you will.

Ms. RICE. Yes, sir, I will.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

It is good to have you back with us.

Ms. RICE. It is good to be here.

Thank you. I just have a few general statements that I would like to make that I think you are already——

Mr. WHITTEN. We would be glad to have you do so.

Ms. RICE [continuing]. Familiar with. The Farm Bureau has a general policy with regard to Federal spending of recommending a freeze of the previous year's appropriations level. Our members believe that it is better to have a spending restraint rather than tax increases as a way of balancing the budget because they see tax increases as a significant drag on their ability to do business.

Having said that, we believe that there are a number of problems right now with the Gramm-Rudman-Hollings process in that so much of agriculture is, in fact, in that 20 percent of Federal spending that is subject to the across-the-board cuts that, as a matter of practice, have continued to hit us very heavily the past few years. Again, that is not particularly within the purview of this committee, but it does concern us.

We are also concerned with the additional but unspecified $1.5 billion reduction that the USDA has proposed in the farm program area.

If you look at USDA spending as a whole, farm program spending is around 4 percent of the budget. CCC is around 1 percent of the budget. We are trying to make the point with particularly people in the media and with some in Congress that agriculture is not the total reason we have a deficit problem in this country.

There are a number of items within the USDA budget that we could comment on but we won't. I have about five that I would like to mention quickly.

First of all, we support the direction of guaranteed financing rather than direct loans for areas like the Farmers Home Administration. We believe that, given budget constraints, that is an appropriate way to move.

Two, we would provide conditional support for the new $100 million research initiative that has been proposed by the Administration; however, we don't think that any money should be shifted from CSRS to fund that particular program. And for funding that comes to the land grant universities, we believe that the States should be able to maintain direction over the way that the research progresses.

Three, we are concerned about the request for new funds in the America the Beautiful program. We think that the goal is lauda-

ble, but we have significant concern, particularly when it concerns the land acquisition program. We are very supportive of reforestation, private forestry, and forestry incentive programs, but we don't want to see to see additional land acquisition right now.

We are concerned over the Federal crop insurance program. It is not working. It will come up for review during the Farm Bill debate. The Administration has not requested any funds for fiscal year 1991, but we would ask you to consider funding it for one more year for this reason: we have a number of producers who must know by July 1st whether or not crop insurance is going to be available for them. They are winter wheat producers who need to go ahead and plan for their sign-ups. The bill will not be disposed of by then, and the insurance companies will want to know one way or another what will be happening with crop insurance, as will producers.

The other point that I would make is that we continue to support adequate funding, particularly in the APHIS area—pseudorabies and brusilosis are our big concerns.

Finally, I would mention that for your use and your staff's use we attached a copy of our general statement on the 1990 Farm Bill. We appreciate your concern in this committee not only for the Farm Bill, but also for the trade negotiations that are currently going on in Geneva.

Mr. WHITTEN. Thank you very much. There are a good many things that, if they work like you have it pictured, would be all right.

This guarantee proposal—in most rural areas it is questionable whether the banks could insure. Most of them don't care to because if they can't borrow from Farmers Home and can't do this, that, and the other, there is a limit on what they can do. One of the problems we have about Farmers Home Administration is that it is a last-resort lender. If they don't lend it, the banks can't afford to, because then DIC will get on the bank about having the loans. It gets involved.

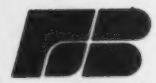
I strictly agree with you about working toward a balanced budget so that we have stability. But what we have is that, every time we get in tight, Federal Reserve issues some more money and then we owe more and more and the money is buying less and less. We are just rolling our problems ahead.

We do appreciate your appearance here and your statement.

Ms. RICE. Thank you, Mr. Chairman.

Mr. WHITTEN. Thank you very much.

[Ms. Rice's prepared statement follows:]



AMERICAN FARM BUREAU FEDERATION
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STATEMENT OF THE AMERICAN FARM BUREAU FEDERATION
TO THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE
AND RELATED AGENCIES
OF THE HOUSE COMMITTEE ON APPROPRIATIONS
REGARDING THE FY 1991 U.S. DEPARTMENT OF AGRICULTURE BUDGET

Presented by

Grace Ellen Rice
Associate Director, Washington Office

March 29, 1990

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The American Farm Bureau Federation is the nation's largest general farm organization with a membership of over 3.8 million member families in 50 states and Puerto Rico. Farm Bureau members produce almost every type of commodity grown commercially in this country. Our policy is developed by producer members at the county, state and national levels of the organization.

Farm Bureau is pleased to appear before the Subcommittee to offer comments on the FY 1991 USDA budget. The state of American agriculture continues to improve as domestic and world demand for U.S. farm products increases. Carryover supplies have been reduced. Net cash farm income is up, land values have increased and total farm debt has declined. The Food Security Act of 1985 has worked well toward its goals of achieving export growth, stocks reduction and income support as agriculture moves toward greater market orientation. Given this background of our general satisfaction with the farm bill and recognizing the constraints imposed by budget considerations, our comments on USDA agency appropriations will be general rather than specific. However, we would like to provide additional comments about future budget deliberations by the Appropriations Committee, Budget Committee and Agriculture Committee that may affect farm policy.

OVERVIEW OF FARM BUREAU'S BUDGET POLICY

Farm Bureau's general position on the budget has remained virtually unchanged over the past several years. We support a freeze in total federal spending at the previous year's appropriations level with the exception of interest payments on the national debt. Spending restraint, rather than tax increases, must be imposed to balance the budget. Any requested spending cuts must be applied in all programs and agencies. Without spending cuts in every budget function, including defense and all entitlements, discretionary spending, which includes many USDA programs, will have to bear a disproportionate share of spending cuts. In fact, a major flaw of the Gramm-Rudman-Hollings law is its failure to include all government programs in sequestration requirements.

USDA FARM PROGRAM SPENDING

Mr. Chairman, Farm Bureau believes that agriculture has borne more than its fair share of budget cuts. We object to an additional and unspecified $1.5 billion reduction in farm program spending. In the minds of the media and unfortunately many in Congress, agriculture is a major contributor to the deficit problem that the nation faces. Nothing could be further from the truth. Total USDA spending constitutes about 4 percent of the federal budget. Farm price and income support spending constitutes only a little over 1 percent of federal spending and has been declining.

Much of the attention continues to be focused on price and income supports. It is true that farm program spending was $25.8 billion in 1986, but by FY 1990 it was estimated that CCC outlays would be in the $8 - $11 billion range. We strongly suggest to the Subcommittee that farm program modifications proposed for the sake of deficit reduction do not necessarily translate into good farm program policy.

GENERAL COMMENTS

Farm Bureau would like to offer comments on several items within the FY 1991 USDA budget:

1. We suggest that the Subcommittee consider savings that may be generated by moving toward guaranteed loans rather than direct financing. For example, this has been proposed for the Farmers Home Administration. A move toward guaranteed financing, rather than direct loans, is supported by Farm Bureau with regard to the FmHA.

2. Farm Bureau provides conditional support for the $100 million research initiative that is part of the proposed USDA budget for FY 1991, provided that the funding is new money.

3. We are concerned about the addition of funds for the "America the Beautiful" initiative. There is a significant land acquisition program associated with the initiative. While we support reforestation programs and the forestry incentive program, Farm Bureau believes that the federal government owns enough land and that new funds should not be appropriated for additional land acquisition.

4. We are concerned that the FY 1991 budget does not contain funding for the crop insurance program. While we recognize that funding the program in 1991 when elimination is actually proposed

seems contradictory, we believe time pressures necessitate funding the program for one more year until the crop insurance review is completed. The future of the crop insurance program can be explored in depth during the 1990 farm bill debate.

5. Adequate funding for animal and plant health items is especially important to Farm Bureau. We note the need especially for brucellosis and pseudorabies eradication and control programs. There needs to be attention on research for the development and future funding of a core animal disease control and eradication program to prevent the introduction of exotic livestock and poultry diseases and pests into this country and to control and eradicate those that currently exist.

CONCLUSION

Mr. Chairman, we appreciate the careful attention that this Subcommittee has always given to the needs of agriculture. Your attention is needed even more as we move toward the development of a new farm bill and as the multilateral trade negotiations draw to a conclusion later this year in Geneva. With reference to the new farm bill, Farm Bureau supports legislation that follows the direction of current law with the addition of a few modifications. We have enclosed a copy of testimony presented to the Senate earlier this month that outlines the specifics of Farm Bureau's position on the farm bill. We hope it is of interest to you.

Thank you for the opportunity to appear before the Subcommittee.

Enclosure

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STATEMENT OF THE AMERICAN FARM BUREAU FEDERATION BEFORE THE SENATE COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY REGARDING THE 1990 FARM BILL

Presented by Dean Kleckner, President
American Farm Bureau Federation

March 21, 1990

STATEMENT OF THE AMERICAN FARM BUREAU FEDERATION
BEFORE THE SENATE COMMITTEE ON
AGRICULTURE, NUTRITION AND FORESTRY
REGARDING THE 1990 FARM BILL

Presented by Dean Kleckner, President
American Farm Bureau Federation

March 21, 1990

Mr. Chairman and members of the Senate Agriculture Committee, thank you for the opportunity to present testimony on behalf of the American Farm Bureau Federation regarding the provisions of the 1990 farm bill. I am Dean Kleckner, a corn, soybean and hog producer from Rudd, Iowa. I also serve as president of the American Farm Bureau Federation.

Farm Bureau has been a supporter of the Food Security Act of 1985. We believe it has played an important role in improving the economic condition of U.S. agriculture. We should not forget, however, that factors totally unassociated with the bill, like the price of fuel, favorable marketing conditions for livestock and poultry, positive developments in farm policies abroad and economic growth in the rest of the world, also played major roles in improving the income situation of U.S. agriculture. I bring this up so that we do not forget that farm legislation is just one of many factors that affect profitability in agriculture.

The task before us now is to take the current, relatively successful farm legislation and improve it in such a way that agriculture can continue to prosper in the 1990s. The changing global environment for economic development and trade, rapid changes in technology, increased competitiveness and awareness of environmental issues are all major factors that will impact agriculture in such a way that it can continue to prosper in the 1990s. The next farm bill must be flexible enough to permit farmers to adjust to an uncertain future.

By nearly every measure, U.S. agriculture is in better condition today than it was in 1985. Given this favorable experience, I would like to urge Congress to continue to pursue many of the basic policy objectives that have contributed to the improvement. In addition, we will support modifications to farm policy that will enhance the structure and effectiveness of farm programs.

AFBF's general objectives for the 1990 farm bill are that the legislation:

1) Reaffirms our commitment to competitiveness;

2) Assures the opportunity for an adequate level of farm income; and,

3) Maximizes freedom for farmers to respond to market conditions.

These goals will be realized if the following recommendations are included in the next farm bill.

Loan Rates:

Loan rates should continue to be tied to a percentage of the average price of the commodity over the past several years. This will ensure competitive pricing. Furthermore, provisions such as the Findley adjustment or the marketing loan for cotton and rice should be continued to assure that our products remain competitive in world markets.

Target Prices:

Target prices should not be reduced below their 1990 levels. Target prices have been reduced approximately 10 percent over the past five years and additional reductions would result in an unacceptable lowering of farm income.

Production Adjustment Programs:

Production adjustment programs should be implemented through voluntary adjustments when carryover supplies exceed desirable levels. Therefore, we support continued use of carryover trigger levels to determine the extent of acreage reduction programs. We believe there may be a better form of establishing the conditions under which acreage reduction programs are authorized or required by USDA. For several years, Farm Bureau has advocated requiring voluntary wheat and feed grain acreage reduction programs when carryover exceeds 4 percent of annual world utilization. The USDA objective in structuring the program should result in a carryover of 3 to 5 percent of world utilization. These figures should be incorporated into the 1990 farm bill.

We have supported the 1985 farm bill acreage reduction trigger levels for cotton and rice but believe reasonable attempts to tie those levels to a percentage of usage may also have merit.

Payment Eligibility and Limitations:

Farm Bureau supports the present program payment procedures and opposes any action that would further target program benefits. We believe the payment limitations under the commodity loan, acreage reduction and disaster programs should be eliminated. However, we recognize the political difficulties in eliminating payment limits. Therefore, if a limitation must apply to cash deficiency payments, we favor no limit lower than the present $50,000 limitation.

Farm Bureau opposes efforts to further target program payments based upon an arbitrary measure of farm size, gross income or total sales receipts. Such

attempts to shift farm programs to a means-tested system of income support would make the programs ineffective and would also fail to recognize differences in farm structure and commodity production practices.

Acreage Flexibility:

The crop acreage base provisions of the 1985 farm bill have severely limited farmers' ability to respond to changes in the demand for commodities from domestic and international markets. This has been particularly true in the case of oilseeds. The program has reduced the economic incentive to produce commodities such as soybeans for the growing world trade market. This has, in turn, allowed other nations to respond to the demand that we have been unable to satisfy. In addition, the program has limited participants' ability to make planting decisions in response to conservation objectives and agronomic considerations.

There is broad consensus that farmers should have greater flexibility of making planting decisions. However, the manner in which that freedom is provided to farmers will be the subject of extensive debate. When formulating a program allowing more planting flexibility, Congress should refrain from targeting a certain quantity of additional acreage for a particular commodity that is perceived as desirable. Instead, the objective should be defined as a need to eliminate impediments to farmers' ability to respond to changing conditions. Moreover, it will be important to assure that any cropping changes are permitted to occur in a manner that treats producers equitably.

As a general farm organization representing producers of virtually all commercially produced commodities, Farm Bureau is particularly concerned that programs are fair and equitable to producers of various commodities; program crops, non-program crops and livestock. Individual farmers and various regions of the country will be affected differently by planting flexibility depending upon the commodities they produce and the production alternatives available. We firmly believe benefits extended to producers of certain commodities must not come at the expense of other producers.

The voting delegates of AFBF's 71st Annual Meeting in January approved a policy statement concerning acreage flexibility that states:

> "Producers should be allowed to interchange the base acreage among program crops and approved non-program crops provided that total deficiency payments and total crop base acreage on the farm do not increase. Deficiency payments will be made only on the permitted acreage planted to the program crop on an established crop acreage base for the individual farm."

The following advantages can be attributed to the principles of AFBF's acreage flexibility proposal:

1) It allows farmers to move out of continuous cropping without sacrificing base acreage. Currently, farmers who may wish to grow a crop other than the program crop may not do so without reducing their future base acreage and potential income.

2) The plan does not unfairly subsidize either non-program crops or other program crops that producers may grow on their crop acreage base.

3) The plan will save the government money each time a producer decides to grow a crop other than the designated program crop on his base acreage.

4) The plan is simple, straight forward and market oriented.

We believe the Farm Bureau plan is more equitable than the current USDA proposal. Under the USDA's proposal traditional producers of a crop, either program or non-program, would be detrimentally affected by producers who expand production of that crop while receiving a deficiency payment based upon the payment acreage base of another crop. We are of the opinion that the USDA's proposal could be characterized as a form of decoupling. The Farm Bureau is opposed to the concept of decoupling.

Grain Reserve Policy:

The issue of grain reserves will be a crucial element of the 1990 farm bill debate. Too often in the past, grain stocks policy has been given only limited attention in policy discussions, while most of the focus has been on issues like loan rates, target prices, acreage idling programs and international trade. The best time to discuss grain reserve policies is when stocks are at reasonable levels, as they are now. As you may remember, in the 1985 farm bill debate, the focus was on how to control burgeoning grain stocks. However, relatively little thought was given to the longer term policy implications.

The Farmer-Owned Reserve (FOR) program was created in 1977 with the objectives of assuring adequate grain reserves, permitting farmers a mechanism for holding grain on farm while receiving storage payments and keeping those commodity stocks out of the market until prices reached a predetermined "release price." These seemingly worthy objectives were attached to policy mechanisms that have proven to be detrimental to both grain and livestock producers. The program has been administered in an attempt to manage grain prices within specified ranges, regardless of the other factors in the market that influence price determination. This comprehensive grain storage policy tends to distort the production and consumption response to the world markets through government

accumulation or release of reserves. It is fundamentally inconsistent with a market oriented farm program.

Despite the objectives of enhanced farm income and adequate stocks levels, close examination of the record will show that the FOR has failed because of flaws fundamental to its concepts and characteristics. Grain reserves held in the program have exceeded two billion bushels several times in the 1980s which created downward pressure on prices. Some stocks have remained in the reserve program for up to 10 years, with release levels set so unrealistically high that farmers holding grain have not been able to move grain into the market when prices have moved to profitable levels.

The flaws outlined above illustrate detrimental consequences for grain producers who have had low prices resulting from large stock levels coupled with the inability to take advantage of favorable prices when they have occasionally developed. On the other hand, the livestock producer has been forced to pay artificially high prices in years when supplies have been tight as a result of the inability to move grain from the reserve into the market.

The fundamental flaws of the FOR have resulted in Farm Bureau adopting the following policy:

"We oppose the farmer-owned grain reserve. It should be replaced by loans made available without interest for a nine-month period to wheat and feed grain producers. A nine-month extension should be made available which should include a charge for interest."

This action would have the following advantages:

1) Producers would have the ability to hold supplies for up to an 18-month period which would permit carrying grain from a large crop into the following crop year when they could adjust their production;

2) The reserves would be farmer based and held in farmer hands until marketed;

3) The stocks would not be locked up by artificially determined release levels;

4) Stocks would not be tied up in government programs for four to six years;

5) Farmers would be permitted to integrate the grain reserve into their normal marketing strategy; and

6) Farmers would be encouraged to produce for the market, not for a grain reserve program.

This market oriented policy change could be accompanied with authority to replenish the Food Security Wheat Reserve to its four million metric ton maximum.

The USDA proposal on grain reserves is similar to Farm Bureau's policy in respect to the program's objectives. We see a definite advantage to our proposal in that it would not be limited to the 600 million bushels of feed grains and 300 million bushels of wheat. Farm Bureau's loan extension would permit all of the grain under CCC loan to be held in the program for the 18-month period rather than defining a specific level of reserve. This is similar to the 18-month cotton loan which has proven to be effective and popular with producers. As with cotton, it would minimize forfeitures to the CCC.

Farm Bureau is generally supportive of continuing the wheat, feed grain, cotton, rice, sugar, peanut and wool programs in their present form. We would recommend some modifications to programs for dairy and soybeans, however.

Dairy:

Farm Bureau suggests that the market orientation developed in the 1985 farm bill be continued. A system of price support adjustment similar to that allowed in the 1985 bill provides a market signal to producers when supply and demand are not in balance. Farm Bureau believes refinements in the calculation of surplus milk and milk components must be made to ensure meaningful market signals.

Currently, we are experiencing a structural surplus of milk. Fluid milk is barely adequate to meet demand while butter is still in excess supply. Changing trends in consumer tastes and preference are responsible for the current situation. It is our expectation that this change in consumer preference will be with us for the indefinite future.

Since the current calculation of milk equivalents is based on a fat basis, support price cuts have been triggered although in reality government purchases have declined. Recent cuts in the support price have not reflected market conditions. Farm Bureau policy calls for calculation of Commodity Credit Corporation dairy purchases on a total solids basis. This change coupled with a continuation of a price support system based on adjustments of up to fifty cents will provide a workable system which more closely mirrors the actual supply and demand situation.

As a normal part of federal food and nutrition programs, significant quantities of Commodity Credit Corporation dairy stocks are utilized. Currently, these stocks are counted as surplus purchases and count toward the 5 billion pound trigger for price support cuts. Since these purchases for foreign and domestic feeding programs are a normal part of federal government activities, they should not be included in the calculation of surplus purchases.

The American Farm Bureau Federation has not endorsed a particular type of stand-by inventory control. Farm Bureau policy does endorse consideration of the options outlined in the National Commission on Dairy Policy report, which gives the secretary discretion in choosing a temporary control method with one important caveat. As a general farm organization, Farm Bureau stresses consistent and equitable treatment of all commodity groups. This is reflected in AFBF policy which states that prior to the implementation of any inventory management program, "provisions shall be made to mitigate impact on, and make restitution to all affected commodities."

Soybeans:

Our policy supports the concept of an income support program for soybeans based upon the previous statutory loan minimum of $5.02 per bushel. This policy would allow us to support a target price or marketing loan program that used $5.02 as the support level. We will evaluate and comment on any alternative plans that support the concept of an income support program for soybeans and other oilseeds. Some form of this concept coupled with the Farm Bureau planting flexibility provision will allow producers to respond to the appropriate soybean price incentives and stem the trend of declining soybean acreage in the United States.

Program Payment Yield:

Farm Bureau has supported this concept of providing farm program benefits based upon proven yields. We supported legislation sponsored by Representative Jontz and Senator Bond in 1989 that permitted farmers to submit actual yield data to ASCS offices and directed USDA to study the cost associated with making program payments on proven yields.

Under the yield calculation employed in the Food Security Act of 1985 many producers have been assigned yields that are far from actual production expectations. We strongly believe measures to correct this situation must be included in the 1990 farm bill.

Conservation:

Farm Bureau supports a number of changes to the conservation provisions of the farm bill. We commend Senator Bond for working to develop a conservation title that will address these issues in a positive and programmatic fashion.

Our major policy emphasis for conservation in the farm bill will be to complete the task we started in the 1985 farm bill. As you will remember, Farm Bureau supported the conservation compliance provisions in the 1985 Food Security Act. We presently have policy which indicates our support for farmers meeting their compliance plans by the 1995 deadline. However, Mr. Chairman, we have serious reservations about whether this is possible if money and technical assistance are shifted out of the Soil Conservation Service (SCS) in order to implement other new

programs suggested for the 1990 farm bill.

According to SCS, they have 36,000 staff years available at the field office level to maintain a minimum presence in each field office, to carry out the recently announced water quality initiative and to help farmers implement their conservation compliance plans. While they have 36,000 staff years available, SCS estimates a need for 54,416 staff years to complete the task above.

Plenty of technical assistance from SCS will be necessary to help farmers build terraces, lay out strip cropping, convert machinery to minimum or no-tillage and other conservation practices. Again, Mr. Chairman, if any of that technical assistance is shifted to other projects, there is no way farmers can complete the application of their compliance plans by 1995.

Farmers have achieved significant erosion reduction due to the Conservation Reserve Program (CRP), application of the compliance plans and through voluntary erosion reduction measures. However, much more can and will be accomplished if we help them fully implement their plans. The amount of work to be accomplished between now and 1995 is astonishing. According to SCS, if every farmer in this country meets his or her compliance plans, we will be building 216,000 miles of terraces, 1.3 million acres of grassed waterways, 45,751 structures, 45.5 million acres will go into some type of conservation tillage and 25.8 million acres will be contoured. These are just a few of the examples of what will be necessary to accomplish the goals. A complete list prepared by SCS is attached to this testimony.

There are several changes we will be supporting as part of the conservation title of the 1990 farm bill. We support extending CRP signups in the 1990 farm bill to achieve at least the designated minimum size, 40 million acres, specified under the 1985 FSA. We also believe at least one additional signup should be held for highly erodible land in order to help farmers who cannot meet their compliance plans and still be economically viable. We are also seeking discretion to alter CRP contract periods and payment terms for acreage other than highly erodible land. In the case of wetlands, we believe the Secretary should provide at least 50 percent, but not more than 75 percent of the cost of restoration, where the economic return is justified. We also support the concept that windbreaks and shelterbelts be eligible for 15-year CRP contracts.

Farm Bureau recommends that at the end of the 10-year contract the farmers are given the option of bringing the land back into production or bidding it back into the reserve. Certainly one of the major unanswered questions regarding the CRP is what should happen to the land once it comes out of the 10-year contract? We believe trying to answer that question without a significant amount of study and input would be wrong. We propose that a study be implemented by USDA with significant input from interested parties. This study should be provided to Congress within the next two years.

Farm Bureau looks forward to continuing to work with members of the Senate Agriculture Committee as you write the 1990 farm bill. Our organization has developed its farm bill policies in consideration of the many commodity and regional perspectives encompassed in our membership. We know writing a comprehensive farm bill will require much the same exercise within the Congress. We look forward to working with you to assist in the development of a sound, effective and politically acceptable farm bill in 1990.

Thank you for the opportunity to share our views with you today.

NATIONAL SUMMARY

MAJOR FSA PLANNED ENGINEERING PRACTICES

PRACTICE	AMOUNT	STAFF YEARS
Terraces	216,000 miles	3124
Grassed Waterway	1.3 million acres	2684
Structures	45,751 (No.)	592
Sediment Basins	90,724 (No.)	515
Diversions	4750 miles	308
Other	-----	2095

TOTAL		9318

MAJOR FSA PLANNED AGRONOMIC PRACTICES

PRACTICE	AMOUNT	STAFF YEARS
Conservation Tillage	45.5 million acres	1884
Cropping System	85.2 million acres	1774
Crop Residue	55.0 million acres	1602
Contouring	25.8 million acres	1039
Critical Area	552,000 acres	543
Field Strips	2.0 million acres	504
Contour Strips	3.3 million acres	310
Other	------	1456

TOTAL		9112

TOTAL Engineering Practices	9318
TOTAL Agronomic Practices	9112
TOTAL	18430

948

THURSDAY, MARCH 29, 1990.

FMHA—GRANT FUNDS—CIRCUIT RIDER PROGRAM

WITNESS

PETE BOONE, NATIONAL RURAL WATER ASSOCIATION

Mr. WHITTEN. Mr. Boone?

Mr. BOONE. Thank you, Mr. Chairman, for letting me appear here today on behalf of the Mississippi Rural Water Association and the National Rural Water Association.

Mr. WHITTEN. We are glad to have you back with us.

Mr. BOONE. Thank you, sir. I am very proud to be here.

I just want to thank you and your committee for the very generous increase in the FMHA grant funds last year. They were put to a great need throughout the United States. We are here today to request your continued support for the grant and loan monies for FMHA and also for continued support for our circuit rider program.

To give you a little illustration on what the grant funds did last year in the State of Mississippi—I know you are familiar with the city of Potts Camp. They have a population of about 800 people. They have 285 water insured customers. They were mandated by EPA to build two new lagoons at the cost of about 100,000 per lagoon. Without this grant money from the Farmers Home Administration, this small town would not have been able to meet that mandate.

Also, our circuit rider programs—last year in the State our circuit riders made 2,250 technical assistance calls, and 50 percent of those calls were requests from water systems and sewer systems throughout the State of Mississippi. So you can see that it is a very, very vital program throughout the United States—not only in the State of Mississippi, but throughout the United States, for small, rural systems and small towns.

Mr. WHITTEN. We are familiar with it. Potts Camp is in my district.

Mr. BOONE. Yes, sir. So we, again, just want to thank you for your continued support. You have been a very dear friend of rural water and rural people during all your time here in this Congress and we certainly appreciate that.

Mr. WHITTEN. The members of this subcommittee believe that this is basic to our economy. I think a whole lot of folks are waking up to that fact, but it is a little late.

Mr. BOONE. Yes, sir. Again, we want to thank you for your support and we appreciate you.

Mr. WHITTEN. We appreciate your support.

Mr. BOONE. Thank you, sir.

[Mr. Boone's prepared statement follows:]

Statement of

Pete Boone

Program Manager, Mississippi Rural Water Association
on behalf of the National Rural Water Association

before the

Subcommittee on Rural Development, Agriculture,
and Related Agencies
House Appropriations Committee
Washington, D.C.

March 29, 1990

Mr. Chairman, thank you for allowing me, as the Program Manager of the Mississippi Rural Water Association and a member of the National Rural Water Association (NRWA), to appear before your Committee today. I am here in behalf of rural water folks all over this country to thank you for the generous and very important increase given the rural water and sewer grant program last year. These funds are being used to great advantage by many small water systems to improve peoples health, strengthen local economic opportunity and assure that rural America stays strong. We want also to express our deepest appreciation for your help in providing an increase in our rural water circuit rider program last year which has enabled us to strengthen the program in all states. We are here today to request the continued support of you and the Committee for these two very important rural programs.

Specifically, we are requesting:

- o funding for the FmHA rural water and sewer grant program at $300 million and the loan program at $600 million

- o funding for the Circuit Rider technical assistance program at $3.7 million to allow for a more intense use of circuit riders in areas of the country affected by the most serious environmental problems.

One of the reasons for requesting the increase in the water and sewer grant and loan program is the overwhelming support this program received in House Agriculture Committee debate on pending rural development legislation. While the focus of the debates was frequently oriented toward protecting the program from dilution at the state level, it was clear that <u>all</u> Committee members believed that the rural water and sewer program is very effective and critical to any rural development effort. The Agriculture Committee should strongly support our proposed rural water and sewer increase both before the House Budget Committee and before this House Appropriations Committee.

In watching this rural development debate in the House, many of us were struck with the fact that the program has such broad support in Congress. However, we were also very aware that without your personal support of the program and the support of this Committee, that the program would not be operating today. It is impossible to overestimate the debt that rural America areas owes you for standing firm for rural water over the past nine years. However, it is also rewarding to see so many of your House colleagues reconfirming your wisdom over these last few years.

The importance of these FmHA funds grows each year as the Federal government presses for higher and higher environmental standards on small water systems. The goal of FmHA has always been to bring safer drinking water to rural residents. However,

now EPA has strengthened its role through both the Safe Drinking Water regulations and the deadline on compliance with the Clean Water Act. These federal requirements are dramatically increasing the cost of managing rural water and rural wastewater systems. In response, small communities have gone to their state governments for help and in some cases have received new resources. However, in these and other cases it would be impossible to gain new financial support without the critical "seed money" that the FmHA grant funds provide for projects in low income areas of each state. These grant funds are highly leveraged and the increase in the grant program is having a multiple impact on the improvement of small water and sewer systems throughout the nation.

This funding is vital to most small water systems because rural water districts do not have the legal standing to float bonds, levy taxes or seek other types of public financing. Private financing as a sole source has seldom been an alternative because of its high cost and consistent unavailability. With a repayment rate on FmHA water and sewer loans of over 99.6%, this is probably the soundest government loan assistance program in the nation. Unfortunately, it is also the reason that these loans were included in the government loan asset sale.

The Environmental Protection Agency continuously cites the FmHA rural water grant and loan program as the major source of funding assistance to help small rural systems meet SDWA requirements. A recent House Appropriations Committee question to EPA received the following response:

> "The Agency has met with the FmHA in an effort to ensure that adequate financial support is and will continue to be available to small water systems to meet additional requirements imposed by the Safe Drinking Water Act."

In effect, we have one federal agency imposing regulatory requirements and counting on another agency (FmHA) to provide funds to support compliance. While we may not like the way this came about, it is the way it is in rural areas and the FmHA grant and loan program is critical to SDWA compliance. The second area of our concern is the assistance available to help improve the operation and maintenance of existing rural water systems. Most rural water systems were developed because neighbors got together and decided that something had to be done about the poor quality or lack of water. These people formed water districts, signed up customers, borrowed funds from the only source available - FmHA - and set up a small water system operation with part-time personnel.

These systems are as varied in their size and structure as rural America itself. Many users are still small "mom and pop" operations; others have grown from a few hundred households to

several thousand, while many small towns are having serious operational problems with old and worn out water systems. The common problem among these systems is the need to improve the quality of the water while continuing to provide water in the most cost effective manner possible.

What has evolved from this need is the rural water circuit rider technical assistance program now operating in forty-eight states, thanks to the action of this Committee last year. There are three Circuit Riders in Mississippi, with one person primarily assisting waste treatment systems. A full-time rural circuit rider, working under the oversight of each state rural water association, is available to provide hands-on assistance and guidance to all rural water systems in every state regardless of size or problem. This allowed many rural systems to steadily improve the efficiency of their operation and the quality of the water delivered. In FY 1988, the Mississippi Circuit Rider program assisted rural water systems with 1,840 Technical Assistance contacts in every county in the state -- an average of 166 technical assistance contacts per month. Almost 50% of these contacts made were in response to direct calls for help from water and waste water system personnel. Circuit Riders have saved significant amounts of money in preventing water loss, reducing the need for replacement of pipes, pumps and other equipment and in working with systems to set adequate water rates in order to provide funds for continuous preventive maintenance.

Finally, we want to express our thanks to this Committee for eliminating the proposed sale of $120 million in FmHA community facility loans in the President's FY 90 budget. We realize that past asset sales and repurchase programs were necessary in order to meet Congressionally mandated federal budget deficit reduction targets. However, this is not a good program and we urge you to continue to eliminate any rural water loan repurchase program as part of future federal asset sales.

During this past year the Circuit Riders have visited over 23,500 rural water systems throughout America to provide hands-on help. The new state circuit riders in the additional states have expanded their activities. We believe that having a national border to border program is having a dramatic impact on the upgrading of small water systems in those areas with the most serious water problems.

One special request we are making is that you consider increasing the funding for the circuit rider program to $3.7 million a year to provide for circuit riders in high environmental risk areas. The SDWA required small water systems to test for over eighty new contaminants over the next three years. Circuit Riders have been the primary assistance available to the smallest and most out-of-compliance rural systems. For example, having an extra circuit rider in Mississippi has greatly enhanced small system compliance in that state.

In closing, we want to again thank you for your past support of rural water and to urge you to maintain the funding level for the FmHA rural water loan program at the $450 million level increase the FmHA grant program at $300 million and provide $3.7 million for the Circuit Rider program.

THURSDAY, MARCH 29, 1990.

RURAL HOUSING AND FOOD STAMPS

WITNESS

RANDALL A. McCAIN, THE AMERICAN ASSOCIATION OF RETIRED PERSONS

Mr. WHITTEN. Mr. Randall McCain.

We are glad to have you, sir.

Mr. MCCAIN. Thank you, Mr. Chairman.

Mr. Chairman, I am Randall McCain, Arkansas State Housing Coordinator for the American Association of Retired Persons. I am also a former rural housing chief for the Farmers Home Administration in Arkansas, as well as the former director for the State Office on Aging in Arkansas.

On behalf of the AARP I want to express our appreciation for the opportunity to testify before you today.

I ask that my written statement be included in the record, Mr. Chairman.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

Mr. MCCAIN. Thank you.

Mr. Chairman, our testimony today reflects the growing concern in our association over the situation of rural older people. Some of the nation's most persistent economic housing and health problems are concentrated in rural areas among older people. Rural poverty is concentrated in the south. The nine States with the highest rates of poverty for older people are all in the South—unfortunately, Mr. Chairman, led by your home State of Mississippi, and followed very closely by my home State of Arkansas.

To address these problems my remarks will focus on two areas under the jurisdiction of this subcommittee: rural housing and food stamp outreach.

The Center on Budget and Policy Priorities recently reported that 57 percent of older people living in severely inadequate housing reside in rural areas. Despite the success of the section 504 home repair program, the number of households served each year has been declining. The Farmers Home reports that over 17,000 eligible applicants are waiting for section 504 grants—five times the number that can be served at current levels.

We recommend that $20 million be appropriated for section 504 grants. At the very least, Mr. Chairman, we recommend that funds be provided to cover increasing programmatic costs, which have eroded the ability of the program to serve low-income older homeowners.

I would like to tell you about a case I recall in Lawrence County when I worked as a county supervisor. It was an elderly couple that lived in the remote section of the county. The man was crippled. He had to use crutches. They had to tote water from a dug well, Mr. Chairman, about 200 feet from the house on the bank of a creek.

We were able to install a sanitary water system, indoor plumbing, repair the roof that was leaking, and replace a defective porch

and steps as a safety means. This was all done with 504 assistance, sir.

We also have concerns about rural rental housing. FMHA data indicates that there are roughly four times as many applications for section 515 housing as can be funded for fiscal year 1990, indicating the degree of unmet need in rural areas.

The section 515 program should be increased, with priority given to serving previously under-served areas and populations such as older farm workers.

Because of the aging of the resident population of section 515 projects, we urge this subcommittee to explore ways to target services under its jurisdiction to rural congregate housing programs. By providing non-medical services such as meals, housekeeping, and personal assistance, congregate housing can be essential to maintaining the dignity and independence of frail older people.

I can tell you of a case we have at Arkansas at Magnolia, Arkansas, where there is a congregate project that went in several years ago. It was developed while I was in the office at Farmers Home.

Mr. Bill Holmes is the director of the housing authority at Magnolia, and he is still there. He told me recently that there are 50 living units in there. It did include congregate facilities. That is the only one we have in the State of Arkansas and the Farmers Home Program. Mr. Holmes said it was a fantastic program and it had been a great help to have those facilities in the project. As a matter of fact, he feels that over half of the people that continue to live there in the independent style of living wouldn't be able to do it if it wasn't for the facilities available.

Low income also means less ability to purchase adequate food to maintain a healthy diet. Outreach is needed to inform potential recipients of their eligibility for food stamps and to assist them in completing their application forms, Mr. Chairman.

The social and physical isolation of rural older people makes outreach difficult but all the more essential in rural areas. Proposals have been made to initiate an outreach demonstration project under the food stamp program. We hope that this subcommittee will fund such an effort when it is enacted, sir.

Thank you again, Mr. Chairman, for the opportunity to testify today. We look forward to working with you to improve the lives of Americans of all ages.

Mr. WHITTEN. I have got to go vote. We are glad to have you here. We work very closely with Arkansas. We are very proud of the fact that years ago we provided $500 million for farm housing.

Mr. MCCAIN. Right.

Mr. WHITTEN. This committee struck out "farm" and put "rural" to make it possible.

Mr. MCCAIN. I was working at that time, sir, and it really did do a lot.

Mr. WHITTEN. We are proud of that.

Mr. MCCAIN. Thank you. I appreciate it.

Mr. WHITTEN. I came from a community where we needed water worse than we did oil.

Mr. MCCAIN. I know what you mean. Thanks a lot, Mr. Chairman.

[Mr. McCain's prepared statement follows:]

AARP

STATEMENT

OF

THE AMERICAN ASSOCIATION OF RETIRED PERSONS

ON

APPROPRIATIONS FOR THE DEPARTMENT OF AGRICULTURE

HEARING OF THE

HOUSE COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

JAMIE L. WHITTEN
CHAIRMAN

Presented by

RANDALL A. McCAIN

ARKANSAS STATE HOUSING COORDINATOR
THE AMERICAN ASSOCIATION OF RETIRED PERSONS

March 29, 1990

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Louise D. Crooks *President* Horace B. Deets *Executive Director*

Mr. Chairman, I am Randall McCain, Arkansas State Housing Coordinator for the American Association of Retired Persons (AARP). I am the former rural housing chief for the Farmers Home Administration in Arkansas as well as the former Director of the State Office on Aging. On behalf of AARP, I want to express our appreciation for the opportunity to testify before you today.

THE CURRENT SITUATION OF RURAL OLDER PEOPLE

Mr. Chairman, this is the first occasion on which our Association has testified before this Subcommittee. Today's testimony reflects the growing concern among our members over the situation of rural older people. Some of the nation's most persistent economic, housing, and health problems are concentrated in rural areas among older people. In 1983, rural older people had a poverty rate of 17.8% compared with 12.1% for older people living in metropolitan areas.

Economic problems are particularly severe among women living alone and among minorities. When these factors are combined, poverty is nearly universal. In 1987, 80% of older black women living alone in rural areas had incomes below the poverty line. Poverty is especially acute in the South. The nine states with the highest rates of poverty for older people are all in the South -- unfortunately led by your home state of Mississippi, Mr. Chairman, where more than one-third (34%) of older people had incomes below the poverty level in 1979. My home state of Arkansas is not far behind with an elderly poverty rate of 28%.

In addition to problems associated with low incomes, older persons in rural areas have much less access to needed services. The lack of services or transportation to needed services can mean losing one's home for too many rural older people.

The Association urges special attention to the plight of older migrant and seasonal farmworkers. For the past three years, AARP has served as co-convener of a National Task Force on Older Farmworkers. Life expectancy among farmworkers is under 50 years, reflecting the dangerous and demanding nature of the labor and the low incomes of the workers. Farmworkers often experience problems characteristic of the elderly before reaching their fiftieth birthday. Disability levels are high -- 44.5% of farmworker families include a disabled member according to one federal study. Unfortunately, access to needed services has often been blocked by prejudice, language barriers, and a lack of outreach.

To address aspects of these problems, my recommendations today will focus on two areas under the jursidiction of this Subcommittee: rural housing and food stamp outreach.

RURAL HOUSING

One result of high rates of rural impoverishment is a striking concentration of housing problems among rural older people. According to research commissioned by AARP's Public Policy Institute, more than half of low-income older homeowners are

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located in rural areas even though only 27% of older households are to be found in such areas. The Center on Budget and Policy Priorities recently reported that 57% of older people living in severely inadequate housing reside in rural areas.

The Association supports current efforts by the authorizing committees to promote a rural housing initiative. If such intiatives are authorized and budget allocations allow, AARP urges this Subcommittee to expand rural housing programs.

To address problems experienced by lower income older homeowners, AARP urges this Subcommittee to expand the Section 504 home repair grant program. Despite the success of this program and the long waiting lists for assistance, funds for Section 504 been frozen for several years. We recommend that at least $20 million be appropriated for the grant program along with an increase in the loan program sufficient to match the grants. At the very least, Mr. Chairman, we recommend that funding be provided to account for increasing programmatic costs which have eroded the ability of the program to serve low-income older homeowners over the last several years.

FmHA data indicates that there are roughly four times as many applications for Section 515 housing as can be funded for FY 1990, indicating the degree of unmet need in rural areas. To provide suitable rural rental housing, the Section 515 program should be increased, with priority given to serving previously

underserved areas and populations such as older farmworkers. Congregate facilities, created both in new projects and through retrofitting existing projects, should be encouraged.

Because of the aging of the resident population, we urge this Subcommittee to explore ways to target services under its jurisdiction to rural housing projects. By providing nonmedical services -- such as meals, housekeeping, and personal assistance -- congregate housing can be essential to maintaining the dignity and independence of frail older people. Evidence from demonstrations conducted by the Farmer's Home Adminstration and HUD has shown that congregate services at housing sites for older people can delay or prevent unnecessary institutionalization. Congregate housing is especially needed in rural areas where alternative community services are often lacking.

Finally, AARP is concerned about the lack of technical capacity within rural institutions to meet the challenges of providing affordable housing. We urge this Subcommittee to request a study by the General Accounting Office (GAO) on the need for technical assistance to potential sponsors of housing, giving special attention to remote areas and areas with large concentrations of underserved populations such as older and disabled farmworkers. Such a study could provide important information to the Subcommittee in making decisions on program levels and targeting for scarce federal resources.

FOOD STAMP OUTREACH

The concentration of low incomes among rural older people also results in less ability to purchase adequate food to maintain a healthy diet. Because diet is important in the maintenance of good health, it is imperative that persons with low incomes have access to Food Stamp benefits.

Outreach is needed to inform potential recipients of their eligibility for Food Stamps and to assist them in completing application forms. The social and physical isolation of rural older people makes outreach difficult but all the more essential in rural areas. Food Stamp participation rates are low among rural people, in part because of the lack of information and in part because of their distance from food stamp offices. A 1984 USDA study found that 27% of nonparticipants lived more than nine miles from the nearest office; 31% indicated that getting to the food stamp office was a "big problem."

Proposals have been made to initiate an outreach demonstration project under the Food Stamp program. We hope that this Subcommittee will fund such an effort, where a relatively small amount of money can make such a large difference in the lives of low income families.

Thank you again for the opportunity to testify today. We look forward to working with you to improve the lives of rural Americans of all ages.

THURSDAY, MARCH 29, 1990.

GEORGIA TREE NUT AND PEACH FRUIT LAB

WITNESS

HON. RICHARD RAY, A U.S. REPRESENTATIVE FROM THE STATE OF GEORGIA

Mr. WHITTEN. The committee will come to order.

We are glad to have our friend and colleague Mr. Ray. We are glad to hear from you.

Mr. RAY. Mr. Chairman, I am glad to be here. Thank you so much. I appreciate the opportunity of testifying before you today.

Mr. Chairman, you have, through the years, known about the Southeastern Tree Nut and Peach Fruit Laboratory down in Central Georgia. It was really established from an old Navy base by Richard Russell.

Your subcommittee has been good enough to provide some seed money for a couple of programs. One is kind of a friendly aphid who we would introduce into pecan groves and it would control enemy aphids.

We are in the decade of the environment now, and for that reason we need to do all that we can to eliminate pesticides and fertilization programs that are harmful.

Another program that is of vital interest is the control of short-life peach trees. Just a few years ago we could grow a peach tree for 25 years; now the average life is about 9 years, but it is decreasing every year. We have tried to control that short-life problem with chemicals. It is not working. We have now found that we have to do it scientifically by breeding root stock, without chemicals, that will be able to sustain the freezes, the early frosts, and the ups and downs of the temperatures in the south that created this short-life problem.

We are at a vital point in both of these programs—a point whereby if we don't keep a little bit of funding in there we are going to slide backwards. All of the scientific work that we have done will just have to be put on the shelf. We will have to go back to using chemicals. The environmentalists—which I understand and believe in their cause—will have problems with this.

We need very badly for 1991, $250,000 for each of these programs; a total of $500,000. I think this investment will come back to you in great measure in years to come. This laboratory works very closely with Clemson University to make sure that we don't duplicate programs. I will say that Clemson is well-funded because they have an advocate by the name of Strom Thurmond up here, who believes in Clemson and he looks after them pretty well. I have said many times that we don't have Strom Thurmond in Georgia, but we have got Jamie Whitten and his colleagues.

I am going to submit my written statement with some documentation in it from the Clemson lab.

Mr. WHITTEN. We will be happy to have it. May I say I inherited only the purse strings from Mr. Mahon.

Mr. RAY. Yes, sir. I understand that. I understand the budgetary problems. I do know that we now have to focus on this decade of the environment.

Mr. WHITTEN. May I say that I appreciate your problems. At one time, Senator Russell was chairman of the subcommittee on the Senate side, so I feel like I grew up on your problem with peanuts and pecans and peaches.

Mr. RAY. Yes, sir.

Mr. WHITTEN. I am familiar with the background on it. With time in the South it is getting harder and harder to deal with peaches.

Mr. RAY. Yes, sir.

Mr. WHITTEN. The son of my law partner has kept me familiar with it. He retired a few years ago—a boy named Dinman. But we are familiar with it and we had better start looking after our own country. I don't know what we can do under the budget, but we are familiar with it and we will do the best we can.

Mr. RAY. Mr. Chairman, I thank you for that. If you would just have your staff people take a good look at this and call us back if we can provide more material, we'd be glad to do it. I think I have some pretty good documentation right here that I will leave for the record.

Mr. WHITTEN. Thank you very much. All of that will appear in the record.

Mr. RAY. Thank you, sir.

[The prepared statement follows:]

STATEMENT BY CONGRESSMAN RICHARD RAY

APPROPRIATIONS SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

HEARING

MARCH 29, 1990

THANK YOU. MR. CHAIRMAN, I AM TESTIFYING TODAY IN STRONG SUPPORT OF A $500,000 INCREASE IN PECAN AND PEACH RESEARCH FUNDING FOR THE SOUTHEASTERN FRUIT AND TREE NUT RESEARCH LABORATORY IN BYRON, GEORGIA.

THIS IS THE DECADE OF THE ENVIRONMENT AND A HEAVY EMPHASIS IS BEING PLACED ON DEVELOPING SCIENTIFIC MEANS TO COMBAT DISEASES AND PEST PROBLEMS AFFECTING OUR FRUIT CROPS AND COMMODITIES GROWN IN AMERICA. MANY PESTICIDES ARE ALREADY BANNED AND MORE ARE UNDER SERIOUS CONSIDERATION AND WILL BE PHASED OUT, PERHAPS EVEN THIS YEAR.

MY PRESENCE HERE TODAY IS ON BEHALF OF THE FRUIT AND NUT INDUSTRY. TO BE MORE SPECIFIC THE PECAN AND THE PEACH INDUSTRY.

THIS SUBCOMMITTEE IN PREVIOUS YEARS HAS PROVIDED SEED MONEY TO INITIATE TWO PROGRAMS WHICH SHOW PROMISE TO COMBAT PEACH TREE SHORT LIFE AND CONTROL APHID INSECTS IN PECAN ORCHARDS. THESE PROGRAMS ARE DIRECTED AT LENGTHENING THE LIFE OF PEACH TREES FROM AN AVERAGE AGE NOW OF ONLY NINE YEARS, AND DECLINING. IN PAST YEARS, PEACH TREES HAVE HAD UP TO A 25 YEAR LIFE SPAN. THESE PROGRAMS ARE ALSO DIRECTED AT CONTROLLING APHIDS WITHOUT THE USE OF PESTICIDES OR CHEMICALS. THE RESEARCH IS UNDER WAY AND CONTINUED INCREASED FUNDING IS IMPORTANT FOR 1991. IF WE ARE GOING TO BE SUCCESSFUL AND PRESERVE THE SCIENTIFIC PROGRESS ALREADY MADE, 1991 FUNDING IS CRUCIAL.

MUCH OF THE SUCCESS IN THIS AREA OF IMPORTANT RESEARCH HAS TAKEN PLACE AT THE SOUTHEASTERN FRUIT AND TREE NUT RESEARCH LABORATORY IN BYRON, GEORGIA WHICH WAS ESTABLISHED IN 1965. DURING ITS HISTORY THIS U.S.D.A. LABORATORY HAS MADE MANY OUTSTANDING CONTRIBUTIONS TO AGRICULTURE IN FRUIT AND NUT RESEARCH. APPROXIMATELY 50% OF THE PEACH CULTIVARS PLANTED IN THE SOUTHEAST WERE DEVELOPED AT BYRON AS WELL AS MANY OF THE PRODUCTION TECHNIQUES AND CONTROLS FOR DISEASES AND INSECTS. DESPITE ITS EXCELLENT TRACK RECORD, THE BUDGET IN BYRON HAS NOT CHANGED SIGNIFICANTLY TO MEET THE HIGHER COSTS OF CONDUCTING RESEARCH OR TO MEET THE INCREASED CHALLENGES OF MODERN AGRICULTURE.

MR. CHAIRMAN, THE COMMERCIAL PRODUCTION OF PEACHES AND PECANS IN THE SOUTHEASTERN UNITED STATES IS CURRENTLY UNDERGOING SEVERAL CRISES. PEACH PRODUCTION HAS DECREASED BY ABOUT 40% IN THE LAST 10 YEARS AND IS FACING EXTINCTION AS A SIGNIFICANT FARM COMMODITY IN THE SOUTHEAST. LIKEWISE, THE PECAN INDUSTRY IS FACING DISPROPORTIONATE LOSSES OF NUTS EACH YEAR BECAUSE OF DISEASE. THESE SITUATIONS HAVE RESULTED FROM A LACK OF SUFFICIENT RESEARCH. FUNDING FOR RESEARCH IN THE AREAS OF PEACH TREE LIFE AND IMPROVING PROTECTION TECHNIQUES AGAINST DISEASES AND INSECTS IN NUT PRODUCTION ARE VITAL. I HAVE BEEN CONTACTED BY NUMEROUS PEACH AND PECAN GROWERS IN GEORGIA WHO STRONGLY SUPPORT THIS ESSENTIAL RESEARCH.

THE U.S.D.A. AGRICULTURAL RESEARCH SERVICE LABORATORY IN BYRON ALREADY HAS MOST OF THE STAFF AND PHYSICAL FACILITIES NECESSARY FOR THESE NEW RESEARCH THRUSTS. HOWEVER, CURRENT FUNDING IS NOT GREAT ENOUGH TO SOLVE THESE CRITICAL PROBLEMS, AND LONG-TERM SOLUTIONS ARE NOT LIKELY TO RESULT UNLESS MORE IS SPENT ON RESEARCH.

THE BYRON LABORATORY NEEDS AN INCREASE OF $500,000 ABOVE THE BUDGET REQUEST TO PERMIT NEW RESEARCH IN THE HIGH PRIORITY PROBLEMS ASSOCIATED WITH PEACHES AND PECANS. THESE ADDITIONAL FUNDS WILL PROVIDE $250,000 FOR IMPROVING EXISTING PROGRAMS ON THE DEVELOPMENT OF PEACH ROOTSTOCKS AND PEACH VARIETIES, AS WELL AS AN INCREASE IN RESEARCH ON THE DIRECT CONTROL OF THE RING NEMATODE AND ARMILLAREA ROOT ROT. THESE PROBLEMS AND THE ABSENCE OF GOOD RESISTANT ROOTSTOCK AND VARIETIES CAUSE 90% OF THE EARLY PEACH TREE DEATH IN THE SOUTHEAST. THIS INCREASED FUNDING WILL ALSO PROVIDE $250,000 TO INCREASE PECAN APHID AND PECAN TREE PHYSIOLOGY RESEARCH THAT WILL EVENTUALLY LEAD TO APHID RESISTANT VARIETIES WITH IMPROVED YIELDS.

MR. CHAIRMAN, I STRONGLY SUPPORT A $500,000 INCREASE IN THE TOTAL BUDGET OF THE SOUTHEASTERN FRUIT AND TREE NUT RESEARCH LABORATORY AND URGE THE SUBCOMMITTEE TO ACT FAVORABLY ON THIS REQUEST. THANK YOU FOR YOUR CONSIDERATION OF THIS REQUEST, AND I HOPE YOU WILL CAREFULLY CONSIDER MY COMMENTS AS YOU REVIEW THIS MATTER.

United States Department of Agriculture | Agricultural Research Service | South Atlantic Area Southeastern Fruit and Tree Nut Research Laboratory | P.O. Box 87 Byron, Georgia 31008

March 29, 1990

SUBJECT: Overview of the mission and contributions of the USDA ARS Southeastern Fruit and Tree Nut Research Laboratory

TO: Congressman Richard Ray

FROM: Bruce W. Wood
Acting Research Leader

The USDA ARS Southeastern Fruit and Tree Nut Research Laboratory was established in 1970 at Byron, GA as a result of the consolidation of several small field stations throughout the southeastern U.S.. This resulted in an excellent laboratory and field research facility centrally located in the southeast near the heart of the regions primary production areas of fruits and nuts. The laboratory's mission is to supply the knowledge and technology necessary for the protection and production of fruit and nuts in the southeast and that of pecan throughout the U.S. While the vast majority of the research effort is devoted to peaches and pecans, crops such as blueberries, plums, nectarines, kiwi, Asian pears, Chinese chestnuts, passion fruit, and Oriental persimmons are also investigated. The location's specific objectives are: to increase the quality and seasonal availability of fruits and nuts; to increase the efficiency of production, protection, and postharvest systems; to reduce agriculture associated pollution to minimal levels, and to reduce the inputs necessary for the production of quality products. Since its establishment, the scientific staff has contributed over a thousand scientific and industry related publications impacting essentially all aspects of peach, pecan, and plum husbandry. The location employs about 50 personnel, including a dozen research scientists representing the disciplines of horticulture, entomology, plant pathology, nematology, and soil science. The complex research mission assigned to the laboratory requires a interdisciplinary approach in the realms of applied research.

The research contributions from the location has traditionally had a major impact on the peach and pecan industries and is heavily utilized by researchers, extension specialists, industry personnel, and consumers throughout the southern tier of the states. This includes the development of improved cultivars (varieties), horticultural techniques, and techniques for protecting fruit and nut crops from pests, methods of extending product shelf-life, recommendations for nutrition management, and biological techniques for controlling harmful insect and disease pests. Among the laboratory's most significant contributions has been the development of about 40 fruit varieties that serve as the backbone of many sectors of the peach industry in the U.S. and throughout the world.

The work currently being emphasized at the laboratory addresses the development of improved varieties of peaches and pecans, the development of rootstocks for stone fruits (especially peaches) that are resistant to the 'short-life syndrome', and pecan stocks for tree size control of pecan, the development of biological alternatives to chemical pesticides for the control of pests on

peaches and pecan; the control of two new and severe disease pests that have recently been determined to be inducing severe economic losses to the pecan industry; the control of alternate bearing and its associated economic and marketing ramifications in the pecan industry; production and protection techniques to reduce the 'cost-price-squeeze' felt by pecan growers and to a lesser extent by the peach growers; and to devise low-input and sustainable methods of producing quality peach and pecan crops.

Ongoing research dealing with the use of beneficial organisms to control insect pests attacking pecans is on the verge of becoming widely available for grower use. Such a breakthrough not only has major ramifications for the pecan industry but also for most other perennial crops; hence, reducing costs and damage to the environment by chemical pesticides. Similar work using beneficial microorganisms is being investigated on peaches.

The location's research effort has substantial cooperative interaction with other federal and state researchers throughout the southern tier of states from South Carolina to California with there being considerable cooperative interaction with scientists in Georgia, Alabama, Florida, South Carolina, Mississippi, Texas, Oklahoma, and California. For example, in the case of South Carolina, there is a joint effort with Clemson University to develop superior rootstocks for peaches. Numerous hybrids and genetic lines are being jointly evaluated for an eventual rootstock variety release to growers that will be resistant to 'peach-tree short-life'. Also, the incidence, virulence and pathogenicity of peach tree damaging nematodes occurring in South Carolina is being jointly investigate. Similar cooperative research efforts on pertinent crops and problems are underway with scientists and growers in the various states mentioned above. The joint research efforts have been a traditional aspect of the location's research efforts and will become increasingly important in the future.

Many of the problems encountered by the fruit and nut sectors of the U.S. Agricultural economy are both severe and complex. The resources required to adequately address and solve these problems are judged to be substantially in excess of that currently available. The USDA ARS Southeastern Fruit and Tree Nut Research Laboratory is in the unique position to effectively and efficiently utilize available resources for the best advantage of the fruit and nut industries, especially that of the peach and pecan sectors of the national agricultural economy. This acquisition of knowledge and transfer of new techniques or technologies will continue to specifically benefit the southeastern U.S. while benefiting the nation in general.

Mr. Barry Fleming (for Congressman Richard Ray)

Needs for peach disease and pest research.

The peach industry in the southeastern United States has undergone a traumatic series of adjustments in the 1980's, caused by crop failures resulting from unfavorable weather and rapidly escalating costs of production that have resulted in a cost-price squeeze. A major cost factor has been an unusually rapid increase in the cost of pest control. Chemical pesticides, which are essential for growing peaches in the warm, humid climate of the Southeast, are far more expensive than they were ten years ago -- in part a result of the stringent requirements for pesticide registration and re-registration. Replacement chemicals for some lost in the registration process often are less effective than those they replaced, and must be used more frequently besides costing more per application.

Production research for peaches should focus on alternatives to chemicals, as is being done in the research conducted with funds allocated by the peach-tree-short-life special grants that the federal government has appropriated. At the same time, funding agencies should recognize that chemical pesticides are not easily replaced for control of some intractable problems associated with fruit production in general and stone fruits in particular. Examples are problems of fruit decay, scab, bacterial spot, and certain root diseases. Funds are badly needed to study more efficient ways to utilize chemical pesticides and minimize the chemical residues that may persist in the environment or on food products. To the extent possible, registration of new, replacement chemicals for those currently under scrutiny by regulatory agencies should be expedited.

Recent excitement about the use of biotechnology as a way to combat pests of fruits and other crops has diminished somewhat with the growing realization that techniques for gene manipulation in the laboratory cannot replace the role of traditional plant breeders. Many fruit breeding programs in the past ten years have been de-emphasized or closed entirely. Funds allocated to encourage biotechnologists and the more traditional plant breeders to collaborate more effectively would invigorate both approaches to develop fruit varieties resistant to pests and diseases. Improved rootstocks also need greater support as part of the breeding program. Rootstocks can be used to help suppress nematodes and root diseases and thereby reduce the need for chemical pesticides applied in the soil.

Biological control, that is, the use of living organisms to suppress pathogens and pests, received considerable support during the 1980's. Substantial progress in biological control was made, and this area of research should continue to receive strong support. Progress was especially notable in the use of pheromones to disrupt insect mating patterns and in the use of biological agents to suppress hard-to-control problems such as root diseases and nematodes. Some biological agents may eventually replace the use of chemical pesticides.

In addition to pest control problems, crop losses from late spring frosts have been especially severe in the last decade. Important advances have been made in understanding the nature of frost injury in plant tissues, but these advances have not translated into more-effective methods of frost control for fruit orchards. Additional funds allocated to research to control frost injury might pay large dividends in terms of more consistent crops and less hardship for fruit growers. Greater emphasis on frost hardiness in fruit varieties, chemical compounds to reduce frost injury, and new methods to protect frost-sensitive tissues are of particular interest.

THURSDAY, MARCH 29, 1990.

TEHACHAPI WATERSHED PROJECT

WITNESSES

HON. WILLIAM M. THOMAS, A U.S. REPRESENTATIVE FROM THE STATE OF CALIFORNIA

KARL M. BACKES, TEHACHAPI-CUMMINGS COUNTY WATER DISTRICT

Mr. WHITTEN. Congressman Thomas of California?

We are glad to have you.

Mr. THOMAS. It is good to be here, Mr. Chairman.

Mr. WHITTEN. I mentioned today I understand California will have seven additional Members, so we are going to pay a whole lot of attention to you.

Mr. THOMAS. Six for sure, and possibly seven.

Mr. Chairman, listening to our colleague, Mr. Ray, it reminds me of the tremendous diversity that must come before you every day. He is talking about peach trees not able to stay alive for nine years. We are currently in my district growing pistachio trees that don't begin bearing until after ten years, and so you have got to keep them going for ten years before you get anything out of them.

Mr. Chairman, I would ask unanimous consent that my written testimony be made a part of the record.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

Mr. THOMAS. It is really a pleasure this year. It has been a pleasure every year to appear before you, but this year is an especial pleasure, Mr. Chairman, because for the first time I am able to come here and ask, once again, for an amount of money—this time $1.1 million—but this amount of money will be the final installment on the Tehachapi watershed project. And so it is my real pleasure to ask for assistance once again for the final time so that next year we will have a completed Tehachapi watershed project. It will have entailed about $12.3 million in Federal money.

It is not a major, major event in California's history. It is in the community of Tehachapi's history, having suffered several significant floods.

It is another mark on your side of the ledger, Mr. Chairman, in terms of allowing Americans to successfully complete an economic project that improves their lives.

It isn't a major event in your life, but I certainly want to tell you that, although you have been thanked a number of times, you haven't been thanked more sincerely. This project rode the shoals of sequestration, which hasn't been required of a number of other projects. We came out the other side successfully, and I appreciate your interest and your continued support.

Mr. WHITTEN. We have something coming up to provide that if sequestration causes something to stop, they can borrow against the last quarter to keep in business. I am very proud of a number of things since I have been in the Congress, but when you had your earthquake we got this through the Congress in eight days.

Mr. THOMAS. Yes.

Mr. WHITTEN. I am very proud of that. We had the cooperation of everybody. I did it on behalf of the California delegation, but I am mighty glad of it. That is kind of what we got this afternoon on this supplemental.

Mr. THOMAS. Yes, and it will be supported.

Mr. WHITTEN. We need to go ahead, which we have tried to do. Thank you. We are glad to hear from you.

Mr. THOMAS. Thank you. I have with me Colonel Backes, who has made these trips again on the roller coaster of funding or potential lack thereof over the years. This also is his final appearance on this project. I have a feeling, given the needs of folks in my district, that all of our needs have not been met.

Mr. WHITTEN. We would be glad to hear from him.

Mr. BACKES. Thank you, Mr. Chairman. I ask unanimous consent to have my testimony placed in the record.

Mr. WHITTEN. I think we have that included in the record.

Mr. BACKES. Thank you, Mr. Chairman, very much.

[The prepared statements follow:]

Statement of the Honorable

WILLIAM M. THOMAS

Member of Congress, 20th District of California

Subcommittee on Rural Development, Agriculture, and Related Agencies

House Committee on Appropriations

March 29, 1990

Mr. Chairman, it is a pleasure to once again appear before you to discuss funding for Soil Conservation Service small watershed projects, particularly the Tehachapi Watershed Project that has been under construction in my congressional district for the past several years.

The Tehachapi Watershed Project is located in Kern County, approximately 35 miles from Bakersfield, California. In the past, flooding has been a major problem in this watershed. Following periods of intense rainfall, flood waters come from the mountain canyons along the south side of the watershed. Damaging flows come primarily from the Antelope and Blackburn Canyons, with water originating in the steeper reaches of those areas moving across agricultural land, depositing sediment and boulders and destroying crops. This same water then passes through the City of Tehachapi, flooding homes, businesses, roads, and the railroad.

The Tehachapi Watershed Project, which remains one of the top priority projects for the California Soil Conservation Service

office, has a benefit-to-cost ratio of 1.3 to 1. This year's funding request for $1.1 million will finish the final phase of the project, the Blackburn Diversion Unit, whereupon flood and soil erosion protection for the City of Tehachapi and more than 3,000 acres of productive farmland will finally be in place. Upon completion, local agencies will have contributed $1.3 million to Tehachapi construction, while the federal government will have spent approximately $12.3 million.

Mr. Chairman, I would like to take this opportunity to thank you and the other members of the committee for your support of the Soil Conservation Service small watershed program. Without your continuing support over the years, the Tehachapi project would never have been completed, and the threat of flood devastation to the city and surrounding areas would have gone on unabated. Your efforts are, and have been, appreciated.

Testimony of Karl M. Backes, President
Tehachapi-Cummings County Water District
supporting FY 91 Funding
for USDA-Soil Conservation Service
Water Resources Programs
before the

U.S. House of Representatives
Committee on Appropriations
Subcommittee on Agriculture, Rural Development, & Related Agencies
Honorable Jamie Whitten, Chairman

March 29, 1990

Mr. Chairman:

My name is Karl M. Backes, and I am president of the Tehachapi-Cummings County Water District in Kern County, California. The District is the leading local sponsor for the Tehachapi Watershed Project, which was authorized and is being built under the P.L. 566 Small Watershed Act program. Other local sponsors for the project are the Tehachapi Resource Conservation District, the City of Tehachapi and the Kern County Water Agency.

Our FY 91 funding request of $1.1 million will be used to finish the last component of the project, the Blackburn Diversion Unit. This will complete the Project and provide economic flood and soil erosion control for 3,000 acres of prime farmlands and the City of Tehachapi. The total federal investment in this project will be about $12.3 million, while the District and other non-federal sponsors will have invested about $1 million, and of course will assume operation and maintenance costs.

I would like to take this opportunity to tell you that your active support for national small watershed protection programs has meant a great deal to us, especially over the last few years of drastic funding cutbacks that have been imposed throughout the nation. These funding shortages have resulted in costly delays and extended construction schedules for almost all the small watershed projects in the country, but California has been hit disproportionately hard.

For the last few years, the California Soil Conservation

Service Office has received little more than half of the actual amount it really needs to maintain an efficient construction schedule for its small watershed projects. The Tehachapi Project, for example, was originally scheduled for completion last year. Other projects that are sorely needed in other parts of the state are looking at 10- to 15-year construction schedules. These are projects that should take no more than four or five years to complete.

To put California's SCS budget needs in perspective, it is important to remember that California alone contributes about 11 percent of the total national agricultural economy. However, the total California SCS budget allocation over the last few years has been about 2 percent of the total national SCS budget.

I understand that it is presently proposed to allocate $16 million for California in FY 91. This amount for California's entire SCS needs, which include more than the Small Watershed Act projects which I am specifically concerned about here today, is simply not enough.

The California Association of Resource Conservation Districts and California project sponsors are requesting that Congress add $15 million to the national SCS budget to increase the California allocation to $31 million in order to meet the state's minimum reasonable needs for soil conservation and resource protection. This is a significant increase, but it is still not in proportion to California's contribution to the nation's agricultural economy. I urge your support for this request.

Mr. Chairman, I have enjoyed the opportunity to meet with you over the last several years. However, I sincerely hope that this will be our last request for funding for the Tehachapi Watershed Project, and that next year you will be able to point to it as another beneficial and cost-effective example of the small watershed program.

THURSDAY, MARCH 29, 1990.

WATER AND WASTE DISPOSAL PROGRAMS

WITNESS

MIKE ELLIS, NATIONAL UTILITY CONTRACTORS ASSOCIATION

Mr. WHITTEN. Next is Mr. Mike Ellis.

Mr. ELLIS. Mr. Chairman, my name is Mike Ellis. I am the President of the National Utility Contractors Association.

NUCA is comprised of 2,000 contractors, suppliers, and manufacturers nationwide that specialize in construction of water and wastewater treatment projects. Many of the water and sewer systems built by our members are financed through the Farmers Home Administration's water and waste disposal grant and loan programs.

Two Federal programs—the Farmers Home water and waste disposal program and the Environmental Protection Agency's construction grants program—represent the government's major source of financing for the nation's low-income rural communities' water and sewage treatment construction needs.

An analysis of the Bush Administration's proposed fiscal year 1991 budget shows a $181 million cut for Farmers Home water and waste disposal, and a $351 million cut for EPA construction grants, for a total cut of $531 million.

Under the Bush proposed budget, Farmers Home water and waste disposal programs would receive $100 million for grants and $350 million for loan, for a total of $450 million; however, these numbers do not even come close to meeting the demand for funding. According to the Farmers Home, as of last December there were over 2,000 loan applications and pre-applications pending, totaling $1.3 billion, leaving unmet demand for funding at almost $850 million.

The small and poor communities in rural areas of the United States will find it even more difficult to satisfy tough Federal water and sewage standards with further cutbacks.

While we understand the need to be realistic under the current budget restrictions, we feel that failure to adequately meet the demand for infrastructure programs such as these is very shortsighted. Over the past few years water programs such as Farmers Home water and waste disposal and the EPA construction grants have borne more than their fair share of cuts. Funding for Farmers Home water and waste disposal program must be viewed in budgetary terms not as a liability, but as a long-term asset because there is no more basic building block for rural development than clean, accessible water.

Mr. Chairman, I conclude by asking you to appropriate an adequate amount of funding in fiscal year 1990 for the Farmers Home water and waste disposal program. A funding level of $630 million, equal to that of last year, is certainly reasonable and responsible in light of the current need for the construction financing and the benefits derived from it.

This program is important. It is efficient. And, above all, it is working.

Thank you for granting me the opportunity to appear before you here today. I will be happy to answer any questions that you may have.

Mr. WHITTEN. Thank you very much for your appearance. this committee has a long history in trying to take care of this water and sewer need. But we, in turn, have limits on what we can do. But we certainly believe in it and will do the best we can.

Mr. ELLIS. We want to thank you for your support in the past and for your recognizing the problems. Thank you.

[Mr. Ellis' prepared statement follows:]

NATIONAL UTILITY CONTRACTORS ASSOCIATION
1235 JEFFERSON DAVIS HIGHWAY, SUITE 606
ARLINGTON, VIRGINIA 22202-3283
(703) 486-2100

Farmers Home Administration (FmHA) FY 1991 Budget Request

The National Utility Contractors Association
Represented by

Mike Ellis
President, WESTCON
&
President
National Utility Contractors Association

before the

House Appropriations Subcommittee on
Rural Development, Agriculture & Related Agencies

March 29, 1990

OFFSET
CAMERA COPY

Mr. Chairman and Members of the Subcommittee:

The National Utility Contractors Association (NUCA) is comprised of 2,000 contractors, suppliers and manufacturers nationwide that specialize in the construction of water supply and waste water treatment projects. Many of the water and sewer systems built by our members are financed through the Farmers Home Administration's (FmHA) Water and Waste Disposal grant and loan programs.

As a result of our work in constructing the facilities financed by these important programs, I will take this opportunity to offer our industry's views on their effectiveness and future.

Reduced Federal Funding

I will begin by expressing the industry's deep disappointment in President Bush's proposal to once again curtail funding for the Water and Waste Disposal program in Fiscal Year 1990. For the past few years, dating back to the Reagan administration, Congress has been forced to battle for every last dollar for FmHA.

The FmHA Water and Waste Disposal programs and the Environmental Protection Agency's (EPA) Construction Grants program represent the federal government's major sources of financing for the nation's rural communities' water and sewage treatment facilities needs. Yet, once again, the Administration is proposing to cut a combined $530 million from these EPA and FmHA programs. This represents a 20% cut from the appropriation levels for these two programs in FY 1990.

Under the Bush proposal FmHA water programs would be cut 28% from the current $631 million to $450 million. This comes at a time when there are, according to FmHA, over 2,000 applications and preapplications pending representing over $1.3 billion in demand for funding.

Your Subcommittee and the Congress are to be applauded for the over $200 million increase that FmHA received for water and waste disposal projects from FY '89 to FY '90. However, as the $1.3 billion in current demand indicates, rural communities still have an acute and urgent need for water and sewer construction financing.

Funding for this program must be viewed in budgetary terms not as a liability, but as a long-term asset because it represents an investment in the future economic growth of our nation's underdeveloped areas. A sound network of water delivery and sewage treatment facilities is essential to the economic growth of these rural areas. Businesses and industries place the condition of an area's water and sewer system near the top of their list of criteria in determining whether to build, expand or relocate.

Adequate funding for these FmHA programs is also necessary to meet the needs of the public health. As we near the 21st century, it is an embarrassment that there are still places in our country where people must rely on outhouses for sanitation. And while septic tanks can be a useful alternative, malfunctioning tanks remain a major source of both groundwater and surface water pollution.

Water Pollution Control

Over the years, the FmHA Water and Waste Disposal programs have also proven to be an important source of financing waste water treatment construction needs mandated by the Clean Water Act.

It is important to note that EPA has been stepping up its enforcement policy against all communities and is requiring them -- often by court order -- to build sewage treatment facilities necessary to comply with federal water quality standards. As we have seen, the EPA construction grants and state revolving loan fund programs and these FmHA programs have been consistently under-appropriated over the past five years. In essence, EPA is saying, "You must construct these facilities. How you pay for them is your problem." The FmHA programs are often the "safety net" for rural communities who have a hard time competing for scarce EPA construction funding.

H.R. 3581

As this is written, the House is still considering the fate of H.R. 3581, the "Rural Development Act of 1990." I would like to congratulate you Chairman Whitten and Representatives Traxler, McHugh, Natcher, Akaka, Durbin, Neal Smith, Myers, Skeen and Weber for supporting the Rose amendment to H.R. 3581.

Our association strongly supported the Rose amendment. We feel that the future of FmHA's Water and Waste Disposal would have been jeopardized had the Rose Amendment not been passed. By removing the authority for the Secretary of Agriculture to transfer funds among rural development programs, we feel that water and waste disposal money will be protected from encroachment by other interests.

The solution is not to force worthy rural development programs to compete among themselves, but rather to insure that there is adequate money to do the job. There is no more basic building block for rural development than clean, accessible water and we are pleased to note the strong support of the members of this subcommittee for FmHA's Water and Waste Disposal programs.

Retainage

Last year, this Committee included language in its report (H. Rept. 101-137), in the Agriculture Appropriations bill for FY 90 (P.L. 101-161) and in the Conference Report accompanying H.R. 2883 (H. Rept. 101-361) instructing the Farmers Home Administration to make allowances for differing state requirements on retainage on construction contracts. FmHA requires ten per cent retainage on partial payments until 50% of the project is completed in conflict with many state laws which require much lower percentages.

When a similar situation arose with EPA contracts, the agency changed its regulations to allow for differing state requirements on retainage.

We have received early indications from the Department of Agriculture (USDA) that they do not plan to revise their regulations and guidelines concerning retainage. This is a distressing development because the USDA is assuming that states cannot effectively set procurement requirements. If USDA persists in disregarding this Committee's report language, NUCA may request that statutory language be included in the next Agriculture appropriation measure to ensure compliance.

Conclusion

Mr. Chairman and members of the Subcommittee, I conclude by asking you to appropriate an adequate amount of funding in Fiscal 1991 for the Farmers Home Administration's Water and Waste Disposal programs. A funding level of $630 million, equal to that of last year, is certainly reasonable and responsible in light of the current need for this construction financing.

As a responsible business group, the National Utility Contractors Association supports a balanced federal budget. But given the figures cited earlier in my testimony, which indicated a proposed 20 percent cut in federal funding for water supply and sewage construction programs, we feel strongly that the construction area of the federal budget has already done more than its fair share in reducing federal spending. Any reductions will not reduce the need for financing, it will only postpone construction and result in even higher costs in future years.

This program is important, it is efficient and, above all, it is working. I strongly urge you to continue your past support for adequate funding for this program in Fiscal Year 1991 and beyond. Thank you for granting me the opportunity to appear before you today and I will be happy to answer and questions you may have at this time.

* * *

Mr. Chairman and members of the Subcommittee:

My name is Mike Ellis and I am the President of the National Utility Contractors Association (NUCA). NUCA is comprised of 2,000 contractors, suppliers and manufacturers nationwide that specialize in the construction of water supply and wastewater treatment projects. Many of the water and sewer systems built by our members are financed through the Farmers Home Administration (FmHA) Water and Waste Disposal grant and loan programs.

Two federal programs, the FmHA Water and Waste Disposal Program and the Environmental Protection Agency's (EPA) Construction Grants Program represent the government's major source of financing for the nation's low income rural communities' water and sewage treatment construction needs. An analysis of the Bush Administration's proposed FY '91 budget shows a $181 million cut for FmHA Water and Waste Disposal and a $350 million cut for EPA Construction Grants for a total cut of $531 million.

Under the Bush proposed budget, FmHA Water and Waste Disposal programs would receive $100 million for grants and $350 million for loans for a total of $450 million. However, these numbers do not even come close to meeting the demand for funding. According to the FmHA, as of December 1989, there were over 2000 loan applications and pre-applications pending totaling $1.3 billion, leaving unmet demand for funding at almost $850 million.

The small and poorer communities in rural areas of the U.S. will find it increasingly difficult to satisfy tough federal water and sewerage standards with further cutbacks. While we understand the need to be

realistic under the current budget restrictions, we feel that failure to adequately meet the demand for infrastructure programs such as these is short-sighted. Over the past few years, water programs such as FmHA's Water & Waste Disposal and the EPA Construction Grants have borne more than their fair share of cuts. Funding for the FmHA Water and Waste Disposal program must be viewed in budgetary terms not as a liability, but as a long-term asset because there is no more basic building block for rural development than clean, accessible water.

Mr. Chairman and members of the Subcommittee, I conclude by asking you to appropriate an adequate amount of funding in fiscal 1990 for the FmHA's Water and Waste Disposal Program. A funding level of $630 million, equal to that of last year, is certainly reasonable and responsible in light of the current need for this construction financing and the benefits derived from it.

This program is important, it is efficient and, above all, it is working. Thank you for granting me the opportunity to appear before you here today, and I will be happy to answer any questions you may have at this time.

* * *

The NUCA President pointed out to the lawmakers that there are two major federal programs that finance sewer-related projects: the FmHA Water and Waste Disposal Program and the Environmental Protection Agency's (EPA) Construction Grants Program. He noted that the fiscal 1991 budget request for the two programs, "represents a staggering 20% reduction from Congressional appropriations for the same programs in fiscal 1990." Ellis went on to say, "we feel strongly that the construction area of the federal budget has already shouldered more than its share of prior budget cuts."

Specifically, the Bush proposed budget shows a $181 million cut for FmHA Water & Waste Disposal and a $350 million cut for EPA Construction Grants for a total cut of $531 million. FmHA would receive $100 million for grants and $350 million for loans for a total of $450 million. However, Matricciani noted, "these numbers do not even come close to meeting the demand for funding." According to FmHA officials, there are currently over 2,000 loan and grant preapplications and applications pending, with a total demand for funding at over $1.3 billion.

The NUCA leader stressed that small and poorer rural communities still have an acute and urgent need for water and sewer system construction financing and that they will find it increasingly difficult to satisfy federal water and sewerage standards with further cutbacks. Ellis concluded his remarks by calling for the Subcommittee to fund the FmHA Water & Waste Disposal Program at a level of $630 million--identical to that appropriated in FY 1990.

* * *

NEWS Release

March 29, 1990

Contact: Lee White

NUCA Urges Funding Hike For Rural Water, Sewer Programs

Arlington, Virginia--In testimony before a Housee Appropriations panel, National Utility Contractors Association (NUCA) President Mike Ellis today called for increased funding for rural water and sewer programs.

Ellis told members of the House Appropriations Subcommittee on Rural Development, Agriculture and Related Agencies of NUCA's "deep disappointment" in President Bush's decision to sharply curtail funding for the Farmers Home Administration (FmHA) Water and Waste Disposal Program. "Funding for the FmHA Water and Waste Disposal program must be viewed in budgetary terms not as a liability, but as a long-term asset because there is no more basic building block for rural development than clean, accessible water," Ellis said. The program provides federal grants and/or loans to low-income rural communities in financing the construction of water supply and wastewater treatment systems.

(more)

Congress Votes "Hands Off" Policy on FmHA Water/Sewer Funding

Arlington, Virginia -- In a major victory for the utility construction industry, the House of Representatives on March 15, 1990, approved an amendment protecting funding for the Farmers Home Administration's (FmHA) Water and Waste Disposal programs from encroachment by other rural development programs. The vote came as the House considered H.R. 3581, the "Rural Development Act of 1990."

H.R. 3581, as proposed, would have allowed state rural review panels to set funding priorities, and would have allowed the Secretary of Agriculture to shift funds between rural development programs based on the panel's recommendations. Funding for all rural development activities would have come from a $1 billion pooling of all rural development programs at the Department of Agriculture (USDA).

The amendment, offered by Representative Charlie Rose (D-N.C.), deleted the provisions that allowed the USDA to transfer funds among rural development programs. The vote on the Rose amendment was 204-193.

"This represents a tremendous victory for NUCA," said Mike Ellis, President of the National Utility Contractors Association (NUCA). "H.R. 3581 would have threatened future funding of FmHA's water and sewer programs. We owe this victory to our NUCA Chapters for getting the message across to Congress that these water and sewer programs are of the utmost importance to our nation's rural communities."

The House is expected to complete action on the legislation during the week of March 19, and the possibility still exists that attempts may be made to restore the funds-transfer provision. The Senate completed its version of rural development legislation (S. 1036) during 1989, and a House-Senate conference committee will need to reconcile the two measures should H.R. 3581 clear the House.

* * *

THURSDAY, MARCH 29, 1990.

FOREST RESOURCES—FIRE PREVENTION

WITNESS

ROBERT S. "SID" MOSS, NATIONAL ASSOCIATION OF STATE FORESTERS

Mr. WHITTEN. Mr. Sid Moss is our next witness.

Mr. Moss. Mr. Chairman, I am Sid Moss. I am the State Forester of Mississippi, and I am testifying on behalf of the National Association of State Foresters.

Mr. WHITTEN. We are glad to hear from you.

Mr. Moss. The National Association of State Foresters—NASF—represents the directors of all State forestry agencies and three territories. Collectively, we oversee about 80 percent of the private, non-industrial lands—about 500 thousand acres.

We would like to begin today by thanking you for giving us the opportunity to appear before your committee and to thank you and Congress for appropriating funding for forestry programs for fiscal year 1990 and in the previous years.

A primary goal of NASF is insuring that stewardship practices are carried out on non-industrial, private forest lands—NIPF—while, at the same time, increasing forest productivity. Our forestlands are a renewable natural resource if managed wisely and with the future in mind. An example of that is the YLT, which you are quite familiar with.

There are several Federal programs in place working towards this goal that Congress has continued to support.

For the first time in many years, forestry issues are receiving significant attention from the Administration. As you know, President Bush has proposed an ambitious, new multiyear program called America the Beautiful. The goal for this program is to plant an additional one billion trees a year.

Consistent with this new initiative, funding has been proposed for several programs that previous Administrations have not recognized. These include the following: agricultural conservation programs, conservation reserve program, and forestry incentives program. NASF supports the levels the Administration has proposed for fiscal year 1991.

However, the Administration has proposed eliminating all funding for the rural community fire protection program, the renewable resources extension act, and the McIntire-Stennis research funding. We feel these are important programs, deserving recognition for the role they play in assisting in the management of our forest resources.

The rural community fire protection program is one of NASF's top priorities. As more and more people leave urban areas and build homes in forested rural settings there is increasing concern for the safety and protection of their lives and property.

Fire protection for improvements in rural areas will depend increasingly on training volunteer and small community fire departments to fight both wildland and structural fires. The rural community fire protection program provides financial and technical assistance to train, organize, and equip rural fire departments.

In the past, available funds have not been able to meet more than one out of ten requests for assistance. To better protect and reduce the loss of life and property, NASF strongly recommends the funding to be at its full authorization level of $7 million.

The renewable resources extension appropriation is targeted to support the nation's need for a continuous supply of forest resources. It is a necessary link in the transfer of needed forest technology to non-industrial private landowners, as well as industry and business enterprises involved with management.

NASF recommends that this program be funded at least at a level of $2.7 million.

McIntire-Stennis research—research and newly-improved technologies are critical to increasing the efficiencies and productivity of forest management and development. McIntire-Stennis research funding provides assistance on a matching basis to land grant colleges, agricultural experiment stations, and other State-supported colleges or universities offering forestry education.

The program recognizes the need for individual States and regions which depend primarily on State universities and the U.S. Forest Service to provide research and a technology base.

NASF recommends an increase for this program to a level of $25 million for fiscal year 1991. We believe this level is needed to ensure the continued effectiveness of this act and to significantly strengthen the role of technology in increasing forestry competitiveness, while providing greater non-commodity benefits from our forestlands.

Also at this point, as you are chairman of the entire committee, we have a research station at Stoneville, Mississippi, that we would certainly recommend restoring service project 4504 at a $300,000 additional level.

The agricultural conservation program—ACP—provides cost-share assistance to landowners implementing practices that prevent soil erosion, conserve water, enhance the water quality, and improve our forest resources. Under the forestry section of the ACP, over 9,000 landowners in fiscal year 1988 were assisted with tree planting on 156,0000-plus acres and 38,000 additional acres receiving some kind of timber stand improvement work. Cost-share for these forestry practices was approximately $9.4 million. Although this was only 5.3 percent of the total ACP appropriation for 1988, the forestry accomplishments were quite substantial.

NASF recommends this program be funded at $176 million for fiscal year 1991.

It is a fact that more acres are being harvested than reforested in many parts of the country. It is not hard to identify the obstacles a small forest landowner faces when considering reforestation: significant cash outlays, high interest rates, long-term cash commitments, cyclic market, and little protection provided for this investment.

Although a relatively small program, FIP has helped in removing some of these problems to landowners, at the same time improving forest resources and helping to assure future timber supplies. In 1988, over 5,200 landowners entered into a cost-share agreement for reforestation and timber stand improvement under

the FIP program, and over 157,000 acres of trees were planted under this program.

NASF supports the Administration's proposed funding level of $12.4 million for fiscal year 1991.

The conservation reserve program is responsible for planting over 2.2 million acres of trees in this country since 1986. The State Foresters are proud to be a part of this effort. However, these acres amount to only 6 percent of the total acres contracted under the CRP program. We believe the program has demonstrated its cost-effectiveness in reducing both soil erosion and improving water quality. In addition, acres planted to trees will provide long-range timber production and other environmental benefits for many years to come.

NASF supports continued funding for the conservation reserve program at a level that will achieve the 12.5 percent goal mandated on the CRP program.

Mr. Chairman, that relates the several programs of forestry. I do appreciate being able to bring this to you.

Mr. WHITTEN. Thank you. We have got a long record of looking after forestry. In my State and most of the country you see a whole lot of land that is in trees, but they are not valuable, where they could well be if handled otherwise.

Mr. Moss. Right.

Mr. WHITTEN. Thank you for your service.

Mr. Moss. Thank you.

[Mr. Moss' prepared statement follows:]

The National Association of State Foresters

Statement of Robert S. "Sid" Moss
Mississippi State Forester
on behalf of the
National Association of State Foresters

Before the

House Appropriations Committee
Subcommittee on Rural Development,
Agriculture, and Related Agencies
March 29, 1990

Mr. Chairman, members of the Committee, my name is Sid Moss, I am State Forester of Mississippi and testifying on behalf of the National Association of State Foresters (NASF). NASF represents the directors of the state forestry agencies for each state and three territories. Collectively, we oversee the management of 80% of the nation's forested lands -- about 500 million acres. I would like to begin today by thanking the Committee and Congress for funding forestry programs in fiscal year 1990 and in previous years.

I welcome this opportunity to appear before you today to discuss the importance of forestry programs that foster good management of a valuable national resource. A primary goal of NASF is ensuring that stewardship practices are carried out on nonindustrial private forest lands (NIPF), while at the same time increasing forest productivity. Our forestlands are a renewable natural resource if managed wisely and with the future in mind.

There are several federal programs in place working towards this goal that Congress has continued to support.

For the first time in many years, forestry issues are receiving significant attention from the Administration. As you know, President Bush has proposed an ambitious, new multi-year program called *America the Beautiful*. The goal of this program is to plant an additional one billion trees a year.

444 North Capitol Street NW Suite 526 Washington, DC 20001

following: Agricultural Conservation Program (ACP), Conservation Reserve Program (CRP) and Forestry Incentives Program (FIP). NASF supports the levels the Administration has proposed for fiscal year 1991.

However, the Administration has proposed eliminating all funding for the Rural Community Fire Protection Program (RCFP), the Renewable Resources Extension Act (RREA) and McIntire/Stennis research funding. These are important programs, deserving recognition for the role they play in assisting in the management of our forest resources.

($ in millions)

	Enacted FY90	Admin FY91 Proposal	NASF FY91 Proposal
ACP	176.9	176	176.9
FIP	12.4	12.4	12.45
RCFP	3.1	0	7.0
Mc-Stennis	17.5	0	25.0
CRP	1.765 bil	2.254 bil	2.254 bil
RREA	2.7	0	2.7

Rural Community Fire Protection Program (RCFP)
The RCFP is one of NASF's top priorities. As more and more people leave urban areas to build homes in forested rural settings, there is increasing concern for the safety and protection of their lives and property. Fire protection for improvements in rural areas will depend increasingly on training volunteer and small community fire departments to fight both wildland and structural fires. The Rural Community Fire Protection Program provides financial and technical assistance to train, organize and equip rural fire departments.

In the past, available funds have not been able to meet more than one out of ten requests for assistance. To better protect and reduce the loss of life and property, NASF strongly recommends RCFP be funded at its full authorization level of $7 million.

Renewable Resources Extension
The Renewable Resources Extension appropriation is targeted to support the nation's need for a continuous supply of forest resources. It is a necessary link in the transfer of needed forest technology to nonindustrial private landowners as well as industry and business enterprises involved with management.

NASF recommends that this program be funded at last year's level of $2.7 million.

McIntire/Stennis Research
Research and newly improved technologies are critical to increasing the efficiency and productivity of forest management and development. McIntire-Stennis Research funding provides assistance on a matching basis to land-grant colleges, agricultural experiment stations and other state-supported colleges or

McIntire/Stennis Research
Research and newly improved technologies are critical to increasing the efficiency and productivity of forest management and development. McIntire-Stennis Research funding provides assistance on a matching basis to land-grant colleges, agricultural experiment stations and other state-supported colleges or universities offering forestry education. The program recognizes the needs of individual states and regions which depend primarily on state universities and the US Forest Service to provide research and a technology base. This unique state-federal-university partnership in forestry research has added significantly to the overall productivity and health of our nation's forests.

NASF recommends an increase for this program to a level of $25 million in FY 1991. We believe this level is needed to insure the continued effectiveness of this Act to significantly strengthen the role of technology in increasing forestry competitiveness while providing greater non-commodity benefits from our forestlands.

Agricultural Conservation Program (ACP)
The ACP provides cost-share assistance to landowners implementing practices that prevent soil erosion, conserve water quality and enhance forest resources. Under the forestry section of the ACP, over 9,000 landowners in FY 1988 were assisted with tree planting on 156,170 acres and 38,394 acres received timber stand improvements. Cost-share for these forestry practices was approximately $9.4 million. Although only 5.3% of the total ACP appropriation for FY88, the accomplishments were quite substantial.

NASF recommends this program be funded at $176 million for fiscal year 1991.

Forestry Incentives Program (FIP)
It is a fact that more acres are being harvested than reforested in many parts of the country. It is not hard to identify the obstacles a small forest landowner faces when considering reforestation: significant cash outlays, high interest rates, long-term cash commitments, cyclic markets and little, if any, investment protection.

Although a relatively small program, FIP has helped in removing some of these obstacles to landowners, at the same time improving forest resources and helping to assure future timber supplies. In FY88 over 5200 landowners entered into cost-share agreements for reforestation and timber stand improvement under FIP. Over 157,400 acres of trees were planted and 29,389 acres of timber stands were improved.

NASF supports the Administration's proposed funding level of $12.4 million for fiscal year 1991.

Conservation Reserve Program
The Conservation Reserve Program is responsible for the planting of over 2.2 million acres of trees in this country since 1986. The State Foresters are proud to be a part of this effort. However, these acres amount to only about 6 percent of total acres contracted under the CRP. The program has demonstrated it's cost-effectiveness in reducing both soil erosion and surplus agricultural commodities. In addition, acres planted to trees will provide long-range timber production and other environmental benefits for many years to come. NASF supports continued funding for the Conservation Reserve Program at a level that will achieve the 12.5 percent goal mandated by Congress.

Mr. Chairman, thank you for the opportunity to present the funding recommendations of the National Association of State Foresters for these important programs.

THURSDAY, MARCH 29, 1990.

CHILD NUTRITION—SUPPLEMENTAL FOOD PROGRAM

WITNESS

HON. WILLIAM F. GOODLING, A U.S. REPRESENTATIVE FROM THE COMMONWEALTH OF PENNSYLVANIA

Mr. WHITTEN. We have now our colleague, Congressman Bill Goodling.

It is good to have you with us.

Mr. GOODLING. Thank you, Mr. Chairman, for allowing me to come to testify about one of my favorite subjects.

Mr. WHITTEN. We are glad to have you.

Mr. GOODLING. I always like to think that Chairman Perkins was the father of school lunch and child nutrition, and maybe I was the son.

Mr. WHITTEN. I was asked about Congressman Perkins today. I told him he was the only fellow that, when you told him no, he couldn't understand your answer.

Mr. GOODLING. That's right. He never understood no. He'd say, "We ain't a-gonna do it."

Mr. WHITTEN. Mrs. Johnson was the same way.

Mr. GOODLING. And, of course, Mary Jane Fiske, to my right, is the brains behind it for both of us.

Mr. WHITTEN. Yes.

Mr. GOODLING. Mr. Chairman, I have suggested for the special milk program what the President has requested: $19,268,000 for the coming fiscal year. When you add the $2,950,000 in unobligated carryover from the current fiscal year, it would permit the program to operate at a $22,218,000 level during fiscal year 1991.

According to USDA's 1991 budget summary, the proposed level will permit about a 6 percent increase in the number of partially-subsidized half-pints served from (188 million to 199.3 million), and a 6.4 percent increase in the number of fully-subsidized half pints served (from 11 million to 11.7 million).

For the child nutrition account I would recommend a total of $5,268,000,000, about 7.8 percent above the amount made available for the current fiscal year.

I have a table at the end of this, and I would ask to have my entire statement and the table submitted for the record.

I have attached this table, and you will be able to see where this money would go.

For the special supplemental food program for women, infants, and children I would recommend an appropriation of $2,315,248,000, which represents about a 4.5 percent increase over what the President recommended.

When I was here before you last year I thought that you had heard the last of me dealing with the number crunchers at the Office of Management and Budget who, in their zealous effort to find some deficit reduction, each year decide that we should eliminate the "subsidy for the paying customer." I am here to tell you there is no subsidy to the paying customer; it is a subsidy to the school lunch program to keep the school lunch program going. If

you don't give that subsidy to include those who are paying customers, the school lunch program in many instances will close. If the school lunch program closes, then they are not mandated to give free and reduced-price meals, so those who cannot afford anything to eat get nothing because we decided we were going to save a few pennies by not sending money out to help subsidize the overall operation of the school lunch program.

The interesting thing about all of this is that it makes it difficult the way OMB is proposing it this year because they say they would eliminate the automatic eligibility for "paid" school lunches extended to children from families with annual incomes between 185 percent and 350 percent. That sounds like pretty big stuff, and actually it is, because if you talk about a four-person household you are talking about incomes between $23,000 and $44,000.

What they would do then is replace it with a requirement for the submission of applications from such families establishing their income eligibility for such paid school lunches for their children.

What they forgot to take into consideration when they tried to talk about what kind of savings they were going to get is the fact that these people had never filled out an application in their life to get a school lunch—or to get any money toward a school lunch—and they aren't about to start doing that now. In fact, we find out even now that only 50 percent of those children who are presently eligible for reduced-price subsidies will fill out those forms.

But if you think about what that would then do to the school district—they now not only have free lunch forms but a variety of paid lunch forms—paid lunch forms for between certain incomes and then paid lunch forms for those who are above those incomes. The school districts would have paperwork coming out of their ears. They would either get out of the business—and a lot of school districts would like to do that anyway, which would be a tragedy—or they would have to spend an awful lot of money having somebody handle the paperwork.

Again, I think it is important to reinforce the fact that the only reason we subsidize what would appear to be those who are paying customers is to subsidize the lunch program so that it can operate—so that there is a program there for the free and reduced-price youngsters; otherwise, they would get nothing.

What I think is interesting about OMB's figures—and I am skipping over a lot of this—when you examine the estimates of budgetary savings prepared to accompany the Administration's legislative proposals, one finds that OMB chose to produce an estimate only for the proposal to eliminate cash and commodity support to upper income paying customers. In fact, the proposal establishing the requirement for regular lunch subsidy applications from parents with annual incomes between 185 percent and 350 percent of the poverty guideline is not even cited either in the President's budget request or USDA's budget summary for the coming fiscal year. In fact, I am sure this is not the Secretary of Agriculture's suggestion; I am sure it is OMB's suggestion.

I was pleased to find out, however, that the Congressional Budget Office's budgetary saving estimates of these two proposals confirmed my judgment regarding the potentially adverse repercus-

sions they would jointly have on the continued participation in both children and schools in the national school lunch program.

In its analysis of the President's budgetary proposals for fiscal year 1991, CBO does assume that the majority of parents or children from households with annual incomes between 185 percent and 350 percent of the poverty guideline would probably not complete the newly-required application for a regular lunch subsidy. And, as I indicated earlier, they back that up simply by saying that 50 percent of those eligible now do not fill them out. And we certainly have to remember the lessons of the past when CBO also assumes that these proposals will cause schools to drop out of the national school lunch program.

I believe the usual thing is that if you raise the school lunch price $0.05, you get a sizeable drop-out in participation. Here we are not talking about raising it a nickel, but talking about cutting out the subsidy that we normally would for each school lunch participant.

The difference in the assumptions used by OMB and CBO on these school lunch recommendations produced what may only be described as dramatically different projections on the budget authority and outlay reductions that the national school lunch program funding would experience over the fiscal five-year period running from 1991 to 1995.

If the proposals were enacted, OMB estimates that total budget authority reductions would be $1,296,000,000, while CBO estimates that the budget authority reductions would be $3,360,000,000.

With regard to the reduced-price lunch recommendation, while it has some merit I wouldn't support the funding of it as the Administration suggested because, as I said, you would be robbing Peter to pay Paul and would probably collapse your overall school lunch program anyway.

Let me just turn then to one other item before I close.

You have heard cash and CLOC kicked around for a long time. It is my feeling—and it has been Congressman Bill Ford's feeling for a long time—that we would probably do a much better job if we went the cash and CLOC route. We have Kansas, for instance, who is strictly cash and has been for years and years and years, but we say nobody else can do that.

I suggested—and so did Bill Ford—that we have a commodity letter of credit (CLOC) which gives the Department of Agriculture the best of all worlds. It first of all allows the surplus to be taken locally. You can buy things fresh, etc., etc. At the same time, the Department of Agriculture controls what it is you may purchase. That is the best of all worlds because if the kids can eat the stuff that is fresh and not things that have been shipped frozen, reprocessed, brought back, and then taste horrible, they hardly go home and tell their parents to buy that kind of food.

With regard to the cash/CLOC districts who had participated in the Congressionally-mandated study examining cash or commodity letters of credits as alternatives to the traditional commodity donation program, the situation is this, Mr. Chairman: as a result of a change in the study methodology (in the middle of the study) assessing the school lunch operations under the cash and clock alternatives, about 64 participating school districts suffered losses in

cash or CLOC purchasing power or in the value of bonus commodities received during school-year 1982 to 1983 as compared to the value received in 1981 to 1982.

Due largely to budgetary constraints, we have only been able to authorize compensation for, and enabled USDA to make payment to, 7 of those 64 school districts.

Since equity dictated that we also compensate the 57 remaining sites, we have now authorized compensation for them through section 103 of public law 101-147, the Child Nutrition and WIC Reauthorization Act of 1989.

We have been informed by USDA that these remaining cash/CLOC reimbursements will be made from fiscal year 1991 funds, so I would ask you to make available some $900,000—the sum CBO has informally estimated would be needed to fully compensate the remaining school districts. Then that will be finished once and for all and we won't have to come back.

Mr. WHITTEN. Thank you very much. We are interested in what you said about it. As you know, we are limited to providing funds under the law. We are finding a good many loopholes and other things that make it hard to keep control of it. We'll just have to do the best we can. We have got limits.

Mr. GOODLING. And you have always done well for us in the past, and we are sure you will this time.

Mr. WHITTEN. We keep trying. Thank you very much.

Mr. GOODLING. Thank you very much.

[Mr. Goodling's prepared statement follows:]

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THE HONORABLE WILLIAM F. GOODLING OF PENNSYLVANIA
TESTIMONY BEFORE THE
SUBCOMMITTEE ON RURAL DEVELOPMENT AND AGRICULTURE
COMMITTEE ON APPROPRIATIONS
MARCH 29, 1990

Mr. Chairman, Congresswoman Smith, I appreciate your allowing me testify before your Subcommittee this afternoon on the Fiscal Year 1991 funding of three of the domestic food accounts under the jurisdiction of the Committee on Education and Labor: the Special Milk Program, the Child Nutrition programs, and the Special Supplemental Food Program for Women, Infants and Children (WIC).

For the Special Milk Program, I join the President in requesting an appropriation of $19,268,000 for the coming fiscal year. This amount, when added to the $2,950,000 in unobligated carryover from the current fiscal year, will permit the program to operate at a $22,218,000 level during Fiscal Year 1991. Such a level would represent an increase of $1,909,000, or 9.4 percent, over the program's post-sequester operating level during the current fiscal year. According to the USDA's 1991 Budget Summary, the proposed level will permit a 6.0 percent increase in the number of partially subsidized half-pints served (from 188 million to 199.3 million), and a 6.4 percent increase in the number of fully subsidized half-pints served (from 11.0 million to 11.7 million).

For the Child Nutrition account, I recommend a total of $5,268,000,000, an increase of $380,506,000, or 7.8 percent, above the amount made available for the current fiscal year. I have attached a table displaying my specific funding recommendations for each of the programs and activities under the Child Nutrition account, and I would like to share my thoughts on some of my recommendations with you.

And for the Special Supplemental Food Program for Women, Infants and Children (WIC), I recommend an appropriation of $2,315,248,000, which represents an increase of $100,000,000, or 4.5 percent, over the President's Budget Request.

When I appeared before you last year, I honestly thought we had heard the last from the number crunchers at the Office of Management and Budget (OMB) who, in their zealous pursuit of deficit reduction, have over recent years generated various legislative proposals to terminate or reduce any and all Federal support -- whether in the form of cash or commodity assistance -- that would inure to the benefit of non-needy children who participate in the Child Nutrition programs. Well, apparently I was wrong.

The Administration's NSLP legislative proposals would:

o eliminate Section 4 cash payments and entitlement commodity assistance (but not any available bonus commodities) for school lunches served to children from families with annual incomes above 350 percent of the OMB poverty guidelines (i.e., to children from 4-person households with annual incomes in excess of $44,450, according to the recently-issued guidelines);

o eliminate the current automatic eligibility for "paid" school lunches extended to children from families with annual incomes between 185 percent and 350 percent of the OMB poverty guidelines (i.e., to children from 4-person households with annual incomes between $23,495 and $44,450) and replace it with a requirement for the submission of applications from such families establishing their income eligibility for such "paid" school lunches for their children; and

o increase the Federal cash reimbursement for reduced-price lunches served to children from families with annual incomes between 130 percent and 185 percent of the OMB poverty guidelines (i.e., to children from 4-person households with annual incomes between $16,510 and $23,495) by an additional 20 cents, thus reducing the maximum allowable price for a lunch served to such children from 40 cents to 20 cents.

According to USDA's own estimates, the elimination of cash and commodity support to the upper-income "paying" child would have an immediate and direct impact on approximately 22 percent of those students who participate in the NSLP on a national basis. This recommendation assumes that, even upon learning that they will have to pay higher prices for their school lunches, these youngsters will continue to patronize their school cafeterias and thus keep their school's participation in the NSLP viable. Experience has already taught us differently.

The folks downtown fail to grasp the dynamics of the NSLP. As we know, Mr. Chairman, Section 4 payments are not direct transfer payments to individual students or their families. These payments are essentially grants-in-aid to local schools intended to assist them in meeting a host of costs associated with the operation of school feeding programs designed to serve all children. The elimination of 22 percent of these Section 4 payments and entitlement commodity assistance cannot help but stimulate the departure of a substantial number of schools from the program.

I submit that any requirement for the submission of applications from children still eligible for a "paid" lunch is certain to have an adverse impact -- the precise dimensions of which are unknown -- on the continued participation of both these children and their schools in the NSLP. I offer you two arguments in support of my contention.

First, this proposal assumes that parents who have never before had to apply for benefits for children who are already "paying customers" at their schools' cafeterias will promptly and dutifully submit applications disclosing their annual incomes. I just don't think that will be the case.

Second, there is no question that such a requirement will double the amount of paperwork currently imposed on local school administrators and food service authorities. They would, of course, be expected to process not just the applications for free and reduced-price meals, but those submitted for the "paid" meals as well. This added task will rapidly translate into significantly increased local program administration costs, which will either have to "eaten" by local school districts or, more likely, be passed along to the students via higher lunch prices. Implementation of the former option would likely discourage continued school participation in the NSLP; implementation of the latter would unquestionably have an additional chilling effect on continued student participation in the NSLP.

When one examines the budgetary savings estimates prepared to accompany the Administration's NSLP legislative proposals, one finds that OMB chose to produce an estimate only for the proposal to eliminate cash and commodity support to upper-income "paying" children. In fact, the proposal establishing the requirement for regular lunch subsidy applications from parents with annual incomes between 185 percent and 350 percent of the poverty guidelines is not even cited in either the President's Budget Request or the USDA's Budget Summary for the coming fiscal year. The absence of any discussion of, or budgetary savings estimate for, this second legislative proposal clearly tells us that OMB believes that the parents of every child eligible under this proposal will submit the required applications -- and that consequently this proposal would not generate any budgetary savings.

I was pleased to find, however, that the Congressional Budget Office's (CBO) budgetary savings estimates of these two proposals confirmed my judgment regarding the potentially adverse repercussions they would jointly have on the continued participation of both children and schools in the NSLP. In its "Analysis of the President's Budgetary Proposals for Fiscal Year 1991," CBO does assume that the majority of parents or children from households with annual incomes between 185 percent and 350 percent of the poverty guidelines "would probably not complete the newly required applications for a regular lunch subsidy." CBO backs up its assumption by noting that "fewer than one-half of eligible children today complete applications for the larger reduced-price lunch subsidy." Remembering the lessons of the past, CBO also assumes that these proposals will cause schools to drop out of the NSLP.

The difference in the assumptions used by OMB and CBO on these school lunch recommendations produced what may only be

described as dramatically different projections of the budget authority and outlay reductions that NSLP funding would experience over the five-fiscal-year period running from 1991 to 1995, if the proposals were enacted. OMB estimates that total budget authority reductions would be $1.296 billion ($1.276 billion in outlay savings), while CBO estimates total budget authority reductions of $3.360 billion ($3.258 billion in outlay savings).

With regard to the reduced-price lunch recommendation, while it has some merit, I would not support funding it as the Administration suggests; i.e., as a relatively small positive offset to the package of substantial funding reductions mentioned above. Here again OMB's and CBO's budgetary cost estimates are based on different assumptions. OMB does not assume that the proposed drop in the cost of reduced-price lunches would attract children and increase participation; CBO does. As a consequence OMB projects budget authority costs of $276 million over the Fiscal Year 1991 - 1995 period (with spending at $270 million), while CBO estimates budget authority costs at $488 million over the same period (with spending at $475 million).

Let me turn my attention to the recommendation involving the Child and Adult Care Food Program. It suggests reducing child care meal subsidies from about $1.31 per meal to about 15 cents per meal for children from families with annual incomes above 185 percent of the poverty guidelines who are enrolled in family day care homes. While I can acknowledge that this is a logical extension of what they proposed regarding the NSLP and there are some legitimate equity issues raised, this recommendation also raises a number of practical problems that we currently do not have solutions for. I would recommend that this proposal, if considered, be examined in the larger context of the Child Care package and not as an isolated add-on to the Administration's child nutrition proposals.

As you review the table I have attached to display my specific Fiscal Year 1991 funding recommendations for the Child Nutrition account's various programs and activities, you will note that the levels I propose for the major food programs (School Lunch, School Breakfast, Summer Food Service, and Child and Adult Care) as well as for State Administrative Expenses and Nutritional Education and Training correspond to CBO's current policy baselines for the coming fiscal year. I have departed from these baselines in the case of two recently enacted authorities: I am recommending appropriations of $2.0 million for Training and Technical Assistance as well as for the Food Service Management Institute.

When I appeared before you last year, I indicated that one small item of unfinished business remained in connection with the cash/CLOC school districts which had participated in the Congressionally-mandated study examining cash or commodity letters-of-credit as alternatives to the traditional commodity

donation program. The situation is this, Mr. Chairman: as a result of a change in the study methodology utilized in assessing the school lunch operations under the cash and CLOC alternatives, about 64 participating school districts had suffered losses in cash or CLOC purchasing power or in the value of bonus commodities received during school-year 1982-1983 as compared to the value received in 1981-1982. I also indicated that due largely to budgetary constraints, we had only been able to authorize compensation for, and enabled USDA to make payment to, 7 school districts. Since equity dictated that we also compensate the 57 remaining sites, we have now authorized compensation for them through Section 103 of P.L.101-147, the "Child Nutrition and WIC Reauthorization Act of 1989." We have been informed by USDA that these remaining cash/CLOC reimbursements will be made from Fiscal Year 1991 funds, so I would ask you to make available some $900,000 (the sum CBO has informally estimated would be needed) to fully compensate these remaining school districts.

With regard to my recommending an appropriation of $2,315,248,000 for the WIC program, Mr. Chairman, the increased amount I propose would permit the percentage of the total eligible population served by the program to jump from its current 60 percent mark to a 68 percent mark during the coming fiscal year. This would be a significant step in our constant effort to permit the delivery of the program's services to a greater segment of the eligible population.

Let me thank you once more, Mr. Chairman, for allowing me to both share my views on some of the issues that concern us jointly and present my Fiscal Year 1991 funding recommendations.

THE HONORABLE WILLIAM F. GOODLING'S RECOMMENDATIONS
FOR THE FISCAL YEAR 1991 FUNDING OF THE PROGRAMS AND
ACTIVITIES UNDER THE CHILD NUTRITION ACCOUNT

	FISCAL YEAR 1990 POST-SEQUESTER OPERATING LEVEL (BUDGET AUTHORITY)	FISCAL YEAR 1991 GOODLING RECOMMENDATION
SCHOOL LUNCH PROGRAM	$ 3,115,124,000	$ 3,302,000,000
SCHOOL BREAKFAST PROGRAM	$ 563,926,000	$ 607,000,000
CHILD AND ADULT CARE FOOD PROGRAM	$ 757,288,000	$ 871,000,000
SUMMER FOOD SERVICE PROG.	$ 170,872,000	$ 184,000,000
STATE ADMIN. EXPENSES	$ 60,647,000	$ 64,400,000
COMMODITY PROCUREMENT	$ 207,837,000	$ 223,700,000
FEDERAL REVIEW SYSTEM	$ 2,600,000	$ 3,600,000
NUTRI.STUDIES/SURVEYS	$ 3,142,000	$ 3,300,000
NUTRI. ED. & TRAINING	$ 4,500,000	$ 5,000,000
TRAINING & TECH. ASSIS.	$ 1,000,000	$ 2,000,000
FOOD SERVICE MGMT. INST.	$ 500,000	$ 2,000,000
TOTAL BUDGET AUTHORITY	$ 4,887,436,000	$ 5,268,000,000

THURSDAY, MARCH 29, 1990.

BIOTECHNOLOGY CENTER—NORTH CAROLINA

WITNESS

HON. DAVID PRICE, A U.S. REPRESENTATIVE FROM THE STATE OF NORTH CAROLINA

Mr. WHITTEN. Next is our colleague David Price from North Carolina.

We are glad to have you with us.

Mr. PRICE. Thank you, sir. I am glad to be here, Mr. Chairman. I appreciate the chance to speak with you briefly about an appropriation that we are seeking for the further development of North Carolina's biotechnology center. I have a statement which I would appreciate your including in the record.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks.

Mr. PRICE. I will give an abbreviated version.

Significant progress has been made in advancing this important project. Staff from the Department of Agriculture made a visit to the site of the proposed facility and met with representatives of the biotechnology center last year, and the preliminary feedback we have received is quite positive from that visit.

North Carolina's biotechnology center was created in 1981 as the nation's first state-side biotechnology initiative. The center's mission it so promote long-term economic benefits to North Carolina through the support of biotechnology research, development, and commercialization.

I can't fully review the range of the center's activities, but I would like to highlight just a few of the accomplishments which have had a direct and lasting impact on agriculture and rural development in North Carolina.

As the first step toward developing a vital biotechnology industry, the center has committed more than $10 million to improve the research capabilities of the State's universities. The Center has taken a leadership role in educating North Carolina's agricultural community about the current and future potential for biotechnology for our farm operators and rural communities. They have worked diligently on improving agricultural education at the secondary level in North Carolina, as well as in our universities.

The Center has also assumed a leadership role in aiding new biotech companies, distributing $2.3 million in seed grants and loans to 24 companies. That has helped them raise an additional $23.5 million from outside sources.

Mr. Chairman, the past successes of North Carolina's biotechnology center can be repeated and built upon with the assistance of this committee. The Center hopes to establish a permanent home in North Carolina's Research Triangle Park. They have plans to build a $5.5 million facility to house their administrative offices, a biotechnology library, and a conference and educational facility.

The majority of the funding for this facility will come from North Carolina's State government and private industry. Of the

$5.5 million total cost, the Center is seeking $1.5 million in Federal support from this committee.

I realize the severe funding constraints that you face. I would urge, though, that the importance of this center and the valuable role it has played in North Carolina a national leader in biotechnology does merit your careful consideration. A small, one-time, farm investment in this effort, in partnership with the State and with biotechnology companies in North Carolina will yield significant dividends to our State's agricultural economy and the national effort in biotechnology research and development.

Mr. Chairman, thank you, again, for this opportunity to testify. I would be glad to answer any questions that you have and would be glad to assist you in any way as you consider this request.

Mr. WHITTEN. We appreciate your appearance here and will cooperate as fully as we can. We appreciate your support through the years.

Mr. PRICE. Thank you very much.

[Mr. Price's prepared statement follows:]

DAVID PRICE
4TH DISTRICT
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CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
WASHINGTON, D.C. 20515

North Carolina Biotechnology Center
Appropriations Testimony

Statement of Rep. David E. Price
before the House Appropriations Subcommittee on
Rural Development, Agriculture, and Related Agencies
March 29, 1990

Mr. Chairman, and distinguished members of the subcommittee, thank you for giving me the opportunity to appear before you today about a matter of great importance to my district, the state of North Carolina, and the future of agriculture in the United States. I am here to seek an appropriation of $1.5 million to assist the further development of North Carolina's Biotechnology Center.

Significant progress has been made in advancing this important project. Staff from the Department of Agriculture made a visit to the site of the proposed facility and met with representatives of the Biotech Center last year. The preliminary feedback we have received is positive.

North Carolina's Biotechnology Center was created in 1981 as the nation's first statewide biotechnology initiative. The Center's mission is to promote long-term economic benefit to North Carolina through the support of biotechnology research, development, and commercialization. The Center works toward five goals:

--to strengthen the research capabilities of the state's universities;
--to encourage partnership among universities, government, and industry;
--to assist business development;
--to educate and inform the public about biotechnology; and
--to expand North Carolina's national and international leadership role in biotechnology development.

In the brief time available, I cannot review fully the range and scope of the Center's activities, but I would like to highlight for this subcommittee some of the Center's accomplishments which have had a direct and lasting impact on agriculture and rural development in North Carolina.

As the first step towards developing a vital biotechnology industry, the Center has committed more than $10 million to improve the research capabilities of the state's universities. These funds have supported the recruitment of outstanding faculty, the acquisition of research facilities and equipment, the establishment of multidisciplinary research centers, and a variety of efforts to encourage intellectual exchange programs in biotechnology.

For example, the Center has helped North Carolina State University fund recruitment packages for outstanding new faculty in poultry science, forestry, and crop sciences. These are critical sectors of North Carolina's agricultural economy, and we need to continue to pursue research advances through biotechnology to maintain and increase their contribution to our state's economic health. The Center's support is an important component of these efforts.

The Center has taken a leadership role in educating North Carolina's agricultural community about the current and future potential of biotechnology for our farm operators and rural communities. Two projects that exemplify this part of the Center's work are an Agricultural Biotechnology Information Project and a statewide initiative to improve agricultural education at the secondary level in North Carolina.

The information project includes a survey of 850 agricultural leaders, Ag Extension agents, farmers, and the general public that was taken last year to determine what North Carolina's agricultural community knows about coming economic trends, alternative crop and farming strategies, and shifts in supply and demand that may result from advances in biotechnology. The results of this study will prove useful to the development of educational programs by the North Carolina Agricultural Extension Service, the FFA, 4-H, and other agricultural education agencies.

The effort to improve secondary education in agriculture is demonstrated by a workshop that was held last summer to allow 350 high school teachers to learn about new agri-science technologies, and to develop teaching methods to introduce high school students to genetic engineering, aquaculture, and other technologies that merge traditional plant and animal agriculture with new biotechnologies. This highly successful program is estimated to have reached almost 60,000 students. Thousands more will benefit from it in the coming years.

The Center has also assumed a leadership role in aiding new biotech companies, distributing $2.3 million in seed grants and loans to 24 companies that has helped them raise an additional $23.5 million from outside sources.

Mr. Chairman, the past successes of North Carolina's Biotechnology Center can be repeated with the assistance of this committee. The Center hopes to establish a permanent home in North Carolina's Research Triangle Park. They have plans to build a $5.5 million facility to house their administrative offices, a biotechnology library, and a conference and educational facility.

The majority of the funding for this facility will come from North Carolina's state government and private industry. Of the $5.5 million total cost, the Center is seeking $1.5 million in federal support from this committee.

I realize the severe funding constraints faced by this subcommittee. However, the importance of this Center and the valuable role it has played in making North Carolina a national leader in biotechnology merits your careful consideration of this request. A small, one-time federal investment in this effort, in partnership with the state and with biotech companies in North Carolina, will yield significant dividends to our state's agricultural economy and the national effort in biotechnology research and development.

Mr. Chairman thank you again for this opportunity to inform you and the other members of this subcommittee about North Carolina's Biotechnology Center. If the subcommittee needs additional information about the Center and this request, my staff and I are ready to assist you in any way.

THURSDAY, MARCH 29, 1990.

ARS WHEAT QUALITY LABS

WITNESSES

DON LOESLIE, U.S. WHEAT ASSOCIATES
WINSTON WILSON, U.S. WHEAT ASSOCIATES
JAMES FRAHM, U.S. WHEAT ASSOCIATES

Mr. WHITTEN. Mr. Don Loeslie?

Mr. LOESLIE. Mr. Chairman, thank you very much for your time and thank you very much for your support. I am Don Loeslie, chairman of U.S. Wheat. With me is our president today.

Mr. WHITTEN. We are glad to have you here.

Mr. LOESLIE. Thank you very much. We are here asking for support of additional funding for the four ARS wheat quality labs. The four labs are the Soft Wheat Laboratory in Wooster, Ohio; the Hard Winter Wheat Quality Lab in Manhattan, Kansas; the Western Wheat Quality Lab in Pulmon, Washington; and the Hard Red Spring and Durham Quality Lab in Fargo, North Dakota.

Until this year, the funding for these labs has changed little over the last decade, and our producers believe that the situation, if not reversed, could affect the ability of the U.S. to be able to compete with other major exporters of quality wheat.

In the current era, quality and diversity can be singled out as factors critical to the future competitiveness of the U.S. wheat in world markets. Our multiplicity of classes produced in the U.S.—hard and soft wheats, white and red wheats, spring and winter wheats—must certainly be viewed as an advantage to both a domestic and an export market in responding the highly-diverse user requirements.

The ability of the U.S. to deliver the wheats of consistent quality within each of these classes is one of the preeminent issues identified in the OTA report on grain quality.

In relatively unregulated U.S. system of grain production and marketing, the breeder and the producer will continue to respond to government policies that emphasize yield over quality. The four labs support USDA agencies and the export industry in resolving quality problems as they arise, and their mission has never been more important than it is today. The mission in this more sophisticated world includes the evaluation of the wheat breeding lines for quality, including milling and end-product performances; the improvement of the efficiency and the relevance of quality tests; the support for USDA regulatory agencies and industry groups in problem- solving, particularly in regards to wheat exports.

The labs, like other core programs, have suffered cost inflation in cost of salaries, supplies, state-of-the-art equipment, facility maintenance, and the need for ARS to be responsive to new program priorities, including the biotechnology, food safety, and water quality items.

Current funding, essentially equally divided among the four labs, is about $2 million dollars. Last year in 1990 you provided the first significant increase of about $600,000, which was split $150,000 per lab, but that is the first in almost two decades.

As important as this increase was, unfortunately it doesn't really do quite all we need to have to improve the operational efficiency and the breeding line evaluation and ensure our ability to keep up with the rapidly-expanding numbers of varieties tested.

It doesn't provide the funding necessary to address the critical issues of methodology development needed to assist the breeder in early generation evaluation, which exponentially increases the number of samples to be analyzed. Nor will it allow for the increased research on the rapid objective procedures of assessment of basic qualities important to the consistency and the quality of exports.

In addition, there are also substantial research needs in the areas of bunts and smuts and we must be careful about ergits. The threat here relates to the movement of pathogens from infected countries to the U.S. which could represent serious potential losses.

Mr. Chairman, you do have funding restraints that Congress has faced, but we feel that it is urgent that we have the increase provided. We urged an increase of $2 million; Congress was kind enough to provide $600,000. We are still in need of the $1.4 million additional money. Maybe we could spread that out over two years, if necessary,but we do need a steady, long-term commitment if we are going to meet the quality challenges ahead of us.

I would just like to close, Mr. Chairman, by noting further that Pioneer Hi-Bred International has recently announced that it is discontinuing its work on the developing of improved hard red winter and hard red spring varieties. They have donated the germplasm and commercial varieties to Kansas State University and to North Dakota State University research. I anticipate that will place an even greater demand on the the research projects as this is moved from the private sector to the public sector—the demand for staff, etc.

So we submit our statement for the record, sir, and respectfully ask your consideration and the consideration of your committee.

Mr. WHITTEN. Thank you very much. As I have mentioned earlier, we will have to do the best we can in view of all of the limitations.

We do appreciate your appearance.

Mr. LOESLIE. Thank you.

[Mr. Loeslie's prepared statement follows:]

Statement by Don Loeslie

Chairman of the Board

of U.S. Wheat Associates

Before the

Subcommittee on Agriculture and

Related Agencies

Appropriations Committee

March 29, 1990

I am here today to speak in support of additional funding for the four ARS wheat quality labs. The four labs are the Soft Wheat Quality Laboratory at Wooster, Ohio (established in 1936), the Hard Winter Wheat Quality Laboratory at Manhattan, Kansas (1937), the Western Wheat Quality Laboratory at Pullman, Washington (1946), and the Hard Red Spring and Durum Wheat Quality Laboratory at Fargo, North Dakota (1963).

Until this year, funding for these labs has changed little over the last decade, and our producers believe that this situation, if not reversed, will affect the ability of the U.S. to compete with other major exporters of quality wheat.

In the current era, quality and diversity can be singled out as factors critical to the future competitiveness of U.S. wheat in world markets.

The multiplicity of classes produced in the U.S.--hard/soft, white/red, spring/winter--must certainly be viewed as an advantage to both domestic and export markets in responding to highly diverse end user requirements.

The ability of the U.S. to deliver wheats of consistent quality within each of these classes is one of the preeminent issues identified in the OTA report on grain quality. In the relatively unregulated U.S. system of grain production and marketing, the breeder and producer will continue to respond to government policies that emphasize yield over quality.

The four labs support USDA agencies and the export industry in resolving quality problems as they arise and their mission has never been more important than it is today. This mission includes:

- -evaluation of wheat breeding lines for quality, including milling and end-product performance,
- -improvement of the efficiency and relevance of quality tests, and
- -support for UDSA regulatory/action agencies and industry groups in problem solving, particularly with regards to wheat exports.

The labs like other "core" programs, have suffered from cost inflation in salaries, supplies, state-of-the-art equipment, and facility maintenance, and from the need for ARS to be responsive to new program priorities including biotechnology, food safety and water quality.

Current funding, essentially equally divided among the four laboratories, is about $2 million. A Congressional add-on in FY 1990 provided the first significant increase of $600,000 for the four laboratories, ($150,000 per laboratory) in almost two decades.

As important as this increase is, unfortunately, it does little more than improve the operational efficiency in breeding line evaluation and ensure their ability to keep up with the rapidly expanding numbers of varieties to be tested.

It does not provide the funding necessary to address the critical issues of methodology development needed to assist the breeder in early generation evaluation (which exponentially increases the numbers of samples to be analyzed) nor will it allow for increased research on rapid, objective procedures for assessment of intrinsic qualities important to the consistency and quality of exports.

In addition, there also are substantial research needs in the area of bunts and smuts. The threat here relates to the movement of pathogens from infected countries to the United States which represent serious potential losses.

Mr. Chairman, we recognize the funding constraints that Congress faces, but we feel that it is urgent that a substantial increase be provided. Last year we urged an increase of $2 million, and the Congress was able to provide an additional $600,000. We still are in need of the additional $1.4 million, but this can be spread over two years if necessary. We will need a steady long-term commitment if we are to meet the quality challenge that is before us.

THURSDAY, MARCH 29, 1990.

PROCESSED FOOD PRODUCTS

WITNESS

DR. SUSAN HARLANDER, INSTITUTE OF FOOD TECHNOLOGISTS
CHARLES W. WIXOM, INSTITUTE OF FOOD TECHNOLOGISTS

Mr. WHITTEN. Susan Harlander?

Dr. HARLANDER. Chairman Whitten, thank you for this opportunity to testify concerning issues important to the food producers and the consumers of this nation and to the Institute of Food Technologists as Congress considers the fiscal year 1991 appropriations.

I am Doctor Susan Harlander, former chairman of the Research Committee of IFT, and I am currently an assistant professor in the Department of Food Science and Nutrition at the University of Minnesota, where I teach and conduct research in food biotechnology.

Accompanying me is Mr. Charles Wixom, IFT Director of Public Affairs.

IFT is a nonprofit, professional, scientific society devoted to discovery of new information and the application of existing knowledge to improving the conversion of raw agricultural commodities into value-added consumer food and industrial products. Its 24,000 scientists are active in academic, industrial, and government organizations.

The chain of our agriculture and food system extends from the farmer that produces raw commodities to the food processor converting these raw materials into safe, wholesome food products, to the distributors and marketers, and eventually to consumers.

To continue to enjoy a safe, nutritious, and economic supply of food, and to be competitive in world markets, each of the links in the food chain must operate efficiently.

Our country leads the world in exports of unprocessed or bulk agricultural commodities. Part of this is due to the fact that we have supported production agriculture. We have a long history of support of production agriculture.

These bulk commodities, however, make up only 20 percent by value of world trade in agriculture. High-value commodities constitute 60 percent of world agricultural trade, and this volume is steadily increasing. Unfortunately for America's farmers and food processing industries, the U.S. has only 7 percent of that market.

The European community, on the other hand, has long realized the importance of value-added agricultural exports. The EC actively supports such products and they hold about 50 percent of trade in high-value products worldwide. In 1987, EC exports of high-value products were valued at $16.5 billion, whereas the U.S. exported $6 billion.

The U.S. has become a net importer of processed foods, in part because we have allowed the scientific foundation of our agricultural and food system to erode. In spite of the safety of our food supply, we continue to be plagued with food-borne illnesses. We simply do not have the basic knowledge about pathogenic organisms or how to process our food supply in order to completely con-

trol them. A case in point is listeria in milk and meat, or salmonella in eggs.

The pesticide content of foods is perceived to be a problem by many consumers. The amount of research funding directed towards new, low-cost methods of pesticide detection, as well as the fate of pesticides in the food chain, is insufficient.

A recent USDA study indicates that we are going to need over 48,000 new college graduates each year to fill employment requirements in the U.S. food and agricultural sector. Nearly 30 percent of those job openings will be for food and agricultural scientists, engineers, and technologists.

The funds to train my own graduate students comes from checkoff funding from the Dairy Board, not from the Federal Government, because there is no Federal funding for value-added food science and technology.

Research and training in agricultural and food sectors have been grossly under-funded. Compared to other agencies such as the health and human services, NIH, the National Science Foundation, and the Department of Defense, whose research budgets have increased steadily, the USDA research budgets have remained relatively static.

I know that you have before you the budget for the national initiative for research on agriculture, food, and the environment. The original request was for $500 million, and the Institute of Food Technologists endorsed this new initiative at the $500 million level for agricultural and food research in the competitive grants area—and I know you have some concerns about that, so I do want to save a minute at the end to discuss competitive grants.

The Executive request, on the other hand, for fiscal year 1991 is $100 million. You will note that there is no request for two categories—new products, processes, and research to add value to our products; and markets, trade, and policy— and that the category for nutrition, food quality, and health, the whole food science and nutrition area, is to receive only $5 million.

The recommendation from another group which you have already heard testify today recognizes the need for research in these areas and have requested an additional overall funding rate of $150 million, with $40 million being devoted to that value-added and nutrition sector.

I urge you to support this proposal. If the national research initiative is funded at the $100 million level, I at least urge you to consider funding the food science value-added category at a minimum of $100 million to help assure that the new products and market for our large investment in production agriculture.

You asked the question earlier about what about these 370,000 farmers that have gone out of business. I think if we had been supporting the value-added sector throughout the time that we have been supporting the production agriculture sector that we wouldn't have nearly as many of those farmers going out of business.

I want to assure you, Mr. Whitten, that we request this funding for research not for research's sake, but to solve the problems and challenges that face the agricultural food system.

You met with the Institute of Food Technologists over a year ago and, as a result of a number of workshops that we have held with

the government agencies, with food processing, trade associations with commodity groups and consumer activist groups, we brought together a number of people in workshops, and they have defined what they believe will be the challenges to the food supply.

I would like to enter into our permanent testimony a summary of that which tells you what the goals and challenges are that are facing the food supply and why we need the competitive grant funding in order to address these concerns.

From a scientist's standpoint, I guess I would also like to address your concern about competitive grants. I do believe in competitive grants because, as a scientist, it challenges me to put forward the very best science—that we only fund the best science. I think the University of Minnesota is a marvelous institution, but I don't think we have all the resources to address some of those special projects.

So I would like to see a competitive grant that challenges me as a scientist to conduct the best science possible in the agricultural and food area.

I recognize the problems with administrative indirect costs and with accountability, but I feel we would work together, as other funding agencies have done, to make sure that I am accountable and to make sure that the bulk of that funding goes to supporting research.

I thank you.

Mr. WHITTEN. Thank you very much for your appearance. I can appreciate your preferring competitive grants. It gives you more freedom. But we have a responsibility here to see that the money is well spent and keep up with what is happening. That being true, I am a great believer in special grants where somebody keeps tabs on what is done and what the effect is. With competitive you have freedom to do what you want to and don't have to report to anyone.

Dr. HARLANDER. I would propose that we put forward——

Mr. WHITTEN. That doesn't say you wouldn't report to anybody; it says you don't have to.

Dr. HARLANDER. But I would propose that we set up a system where I am accountable, that we come up together with what the research objectives are.

Mr. WHITTEN. When you get the law changed we'll be glad to review it again.

Dr. HARLANDER. I'll try.

Mr. WHITTEN. Thank you very much. We appreciate your interest, and we can understand it.

Mr. WIXOM. Sir, one quick correction I hate to make. My colleague misquoted one figure here. It was $10 million for food science technology, not $100 million.

Dr. HARLANDER. I'd rather have $100 million, but I'll take $10 million.

Mr. WHITTEN. After consultation, that is in the record.

Thank you very much.

[Dr. Harlander's prepared statement follows:]

Testimony of

The Institute of Food Technologists

by

Dr. Susan K. Harlander

Past-Chairman
IFT Research Committee

before the

Subcommitte on
Rural Development Agriculture and Related Agencies
Committee on Appropriations

U.S. House of Representatives

on the

FY 1991 Appropriations - Research Provisions

March 29, 1990

Testimony of the Institute of Food Technologists
before the
Subcommitte on Rural Development Agriculture and
Related Agencies - Committee on Appropriations
March 29, 1990

Chairman Whitten and Honorable Members of the Subcommittee: Thank you for this opportunity to testify concerning matters and issues important to the food producers and the consumers of this nation, and to the Institute of Food Technologists, as the Congress considers the fiscal year 1991 appropriations.

I am Dr. Susan K. Harlander, former chair of the Research Committee of the Institute of Food Technologists or IFT. I am currently on the faculty of the food science and nutrition at the University of Minnesota, where I teach and conduct research in biotechnology. Accompanying me is Mr. Charles W. Wixom, IFT director of public affairs.

The Institute of Food Technologists is the professional society that represents some 24,000 scientists in private industry; government, scientific and regulatory bodies; and academic institutions that are engaged in the processing, distribution, and regulation of the nation's value-added food supply. Food scientists develop the scientific and technical basis for transformation of raw agricultural commodities into nutritious, edible, safe and convenient food products.

Food science is that all-important link between the farm and the consumer that applies the basic sciences of biochemistry, engineering, microbiology, nutrition and toxicology to raw agricultural commodities. Maintaining leadership in food science and technology is absolutely essential to a healthy, profitable agricultural economy. The key to that leadership is well funded research!

THE NATION'S FOOD SUPPLY

We will address the challenges to the food supply system in this country through our presentation, and we will describe why it is imperative for the Congress to increase funding specified for food science and technology research. To the point, we will show why it is critical to authorize — now, in this Farm Bill, to mandate — a line-item of at least $10 million a year for food science and technology R&D in the nation's colleges and universities.

The challenge to the food supply comes from both within this country and from outside of the United States.

As a nation we must maintain confidence in our food supply, and adequate funding for R&D provides that opportunity. The Institute of Food Technologists has endorsed the proposed $500 million initiative to increase funding for agricultural, food and environmental research. We have done so, however, with the reservation that the potential role of food science in the proposed initiative is not appropriately defined with respect to both the relative prominence of other scientific disciplines

and the potential contributions that food technologists and food scientists can make toward the objectives stated.

FOOD SAFETY

Within America, there is increasing concern about the wholesomeness and safety of the food supply. For example, questions about the continuing problem of foodborne pathogenic organisms such as salmonella and listeria need to be answered: concerns about the fate of pesticides in the food chain. The relationship between dietary components such as fat, cholesterol, fiber and health must be further researched. All of these many issues, left unanswered, can cause serious harm to the U.S. food production system, the national and local economies, and the American consumer.

Our scientific society has a long-standing role in advancing scientific research relative to the safety of the food supply. Indeed, many of our members have made significant contributions to increased consumer confidence.

IFT members, and others, have advanced the field to the point that rapid methods of the detection of some microorganisms that cause foodborne illness (salmonella, listeria, staphylococcal toxin) have been reduced from days to hours. With continued research, we'll be able to do it in minutes.

Continued research in these areas, and a strengthened program of research and education in the nation's college and university food science departments, will further extend the present impressive margin of food safety for the American consumer.

CONSENSUS

IFT has been concerned that the research and training of food scientists be relevant to the pertinent needs of the broader society. In 1984, IFT brought together 200 scientists in academia, industry and government to determine the more important food science research needs until the next century.

Following this, in 1989 the IFT Research Committee convened a number of workshops in Washington, D.C. to focus on those challenges and issues that need more research to improve the safety of the food supply, the health of the nation, and the economic value of food products. The workshops involved a substantial number of members of farm groups, consumer organizations, scientific societies, trade associations, and regulatory and research agencies.

These groups, by consensus, recommended the minimum steps required to further the scientific base by which to meet three challenges to the food supply: assuring its safety, improving the nation's nutritional health and improving the value of food-based products.

FOOD PROCESSING, FOOD TECHNOLOGY: ECONOMIC VALUE

Food processing is the nation's largest industry as measured by value of products shipped. In 1985, using the latest data available in published form, the food processing industry shipped products worth just over $300 billion, or 13 percent of all manufacturing industry shipments.

Food processing contributes substantially to the economies of dozens of individual states. For example, 10 percent of the value of the manufacturing output in Texas and in California is directly related to food processing operations. The business side of our profession produces one fourth of the value of all manufacturing output in Arkansas, and about 15 percent of the industrial economy in Mississippi and Washington.

In terms of output nationally, the top 10 food processing states include: New York, Pennsylvania, Ohio, Illinois, Wisconsin, Iowa, Minnesota, and Florida — in addition to Texas and California, already mentioned.

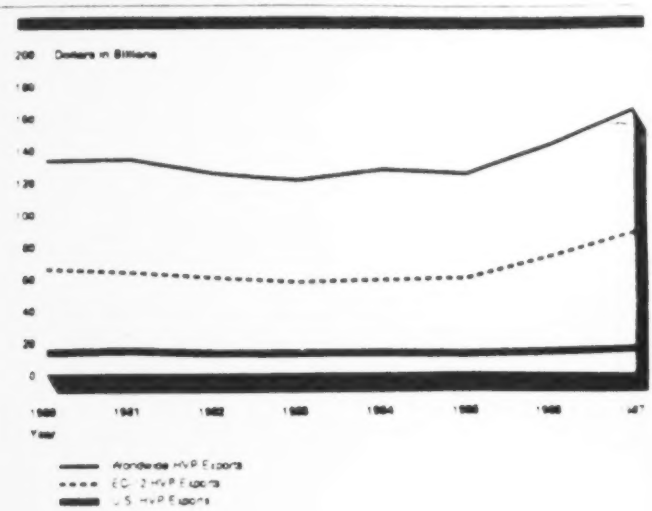
IFT does appreciate the efforts of many of the Members of Congress to forward the interests of food science and technology in the 1985 Food Security Act, but our urgent need today is for well defined authorization for food science research.

LACK OF R&D FUNDING IN FEDERAL BUDGETS

The fact remains that USDA budgets for external programs continue to omit any item specified for food science and technology research in our universities. The amounts available in other USDA budgets have amounted to a scant $2.5 million per year.

The contrast with federal support for health research is striking. Public funding of food science research in the U.S. has lacked the increased support given to public and private research laboratories of our principal competitors in world agricultural markets. The impact of aggressiveness by the European Economic Community (EC) has already made itself felt, as the General Accounting Office (GAO) has recently reported. In its study of international marketing trends, "International Trade—Foreign Market Development for High Value Agricultural Products," (HVP) released January 17, 1990, the GAO points out the relatively rapid rise of EC exports of high value (processed and semi-processed) foods compared to a flat trend for U.S. exports. It notes that, "By 1987, both the Netherlands and France outranked the United States in HVP market share."

Figure 1.2 Worldwide EC-12 and U.S. HVP Agricultural Exports, 1980-1987



> "This comparison" the GAO report emphasizes, "illustrates the increasing importance of HVP trade to the United States. Compared to an equivalent volume of bulk exports, HVP exports are associated with higher levels of employment, gross economic output, personal income, and government tax revenues.
>
> "Because high value exports involve selling both the agricultural product and the value added to turn it into a more valuable processed item, the concentration of U.S. agricultural exports in bulk and semi-processed products generates less economic value than would a mix with more semi-processed, and highly processed products."

We are the profession that can help resolve this threat. But we cannot do so effectively or expeditiously if we don't have the support (that other fields enjoy).

Specifically, we ask this committee to include in its FY 1991 appropriations for the USDA-CSRS budget a line-item for $10 million specified for food science and technology research through the competitive grants program.

We recognize that departments in the colleges of agriculture traditionally are supported through formula funding. However, that mechanism operates in such a way as to retard the growth of the smaller, more innovative departments; the larger get larger and the smaller shrink. But neither this nation nor our profession can afford further neglect of our urgently-needed science at this stage of history.

Competitive grants offer opportunities to stimulate aggressive innovation in such key areas as biotechnology, food safety, and the scientific foundations needed to forge new value-added products from the output of American agriculture.

For some years, such disciplines as animal and plant science, nutrition and others have enjoyed line-items. But food science and technology have been ignored by the granting agencies without such a specific identity.

If granted the line-item appropriation, we suggest it most usefully could be employed in research as follows:

Areas	Percent	
Improved microbiological food safety	40%	($4 million)
Meeting nutrition requirements, and finding new ways to upgrade both the nutritional content of foods and nutrition practices	20%	($2 million)
Increase utilization of surplus commodities in value-added products	40%	($4 million)

With the appropriate support, and with increased public understanding, America's food scientists and technologists can help this nation to maintain a technological and nutritional advantage that perhaps no other nation now enjoys.

We thank you. We would be pleased to answer any questions you may have.

# # #

INSTITUTE OF FOOD TECHNOLOGISTS

CHALLENGES TO THE FOOD SUPPLY: THE NEED FOR FOOD RESEARCH

Diets, nutrition, food safety, or quick sustenance — in a variety of ways food is on consumers' minds these days. Americans take it for granted that food should look and taste good. But in addition, they want it to deliver better health and vigor — without deflating their wallets.

How can our food system continue to deliver? In Washington, D.C., in 1989, representatives of science, industry, and government discussed that challenge, at the invitation of the Institute of Food Technologists.

This document describes the needs identified by this convocation for the future well-being of American consumers and to help the U.S. maintain a world leadership role; it recommends the minimum steps required to further the scientific base with which to meet these challenges.

CHALLENGE: ASSURE THE SAFETY OF THE FOOD SUPPLY

GOALS:	TO ACCOMPLISH GOALS:
Decrease the incidence of foodborne illness.	• Develop better scientific techniques to detect and identify contaminants, so as to better eliminate them.
Decrease chemical and pesticide residues in foods, as well as toxic compounds that occur naturally in foods.	• Determine how microorganisms grow, change forms and survive throughout the food system so they can be better controlled. • Determine what happens to chemical and pesticide residues, and other (natural) substances during processing, storage and distribution. • Determine when and how a substance exceeds safety limits for different types of people and how to prevent such excesses if they occur.

CHALLENGE: IMPROVE THE NATION'S HEALTH

GOALS:	TO ACCOMPLISH GOALS:
Learn how diet affects health.	• Learn how the body uses nutrients and what detracts from their use.
Find out how much of each nutrient is needed, at each stage of life, for optimum health.	• Learn how different food components affect the body and define how much of each is needed at each stage of life. • Explore how diet and health are affected by heredity. • Find out what effects new foods — including foods that are bioengineered — and changes of diet have on nutrition. • Learn what effect behavior has on a person's nutrition, food selection and well-being.

CHALLENGE: IMPROVE THE VALUE OF FOOD PRODUCTS

GOALS	TO ACCOMPLISH GOALS:
Develop new ways to utilize agricultural commodities.	• Develop basic knowledge of agricultural commodities and wastes so that innovative non-food value-added products can be devised.
Increase quality and value of food products.	• Understand the technical composition of food. • Develop new ways of preserving food.
Assure packages that withstand damage and ensure safety.	• Determine alternative uses of recycled food packaging material. • Quantify the interactions that occur between food and the package.

MEETING THE CHALLENGES

A $10 million line item for "Food Science and Technology" should be established in the Cooperative State Research Service Competitive Grants Research Budget to assure the safety of the food supply, enhance the nation's health, improve the value of food products, maintain an edge against rising competition, and educate future food scientists.

Institute of Food Technologists
Research Committee

THURSDAY, MARCH 29, 1990.

PLANT STRESS AND WATER CONSERVATION LAB

WITNESS

DR. SAM CURL, DEAN, TEXAS TECH UNIVERSITY
DR. BOB ALBIN, TEXAS TECH UNIVERSITY

Mr. WHITTEN. Dean Sam Curl of the Texas Tech University is our next witness.

Dr. CURL. Thank you, Mr. Chairman.

I am Sam Curl, Dean of the College of Agricultural Sciences at Texas Tech University. With me today is Doctor Bob Albin, who is our associate dean for research and director of our plant science research institute.

We are most appreciative for the opportunity to appear before the committee today on behalf of urgently-needed research in plant stress and water conservation.

In 1988, the 100th Congress and the President signed public law 100-339 authorizing the establishment of a plant stress and water conservation research laboratory and program on the Texas Tech University campus. The laboratory will provide facilities for scientists to conduct broadly-integrated research and to improve crop stress tolerance to drought and climatic and temperature extremes.

The greenhouse effect resulting from increased atmospheric carbon dioxide and other gasses, global warming-induced climatic changes, and the extensive drought of the summer of 1988 are ready examples of the fragility of our managed and natural ecosystems and the potential for reductions in food and fiber quantity from even modest changes in weather patterns.

Projections of continued water shortages make the funding of the authorized plant stress and water conservation laboratory critical to the research required to genetically alter crops to ensure tolerance to future climatic extremes. These extremes are widely predicted to increasingly impact most plant growth patterns in the northern hemisphere during a period of time from now through the early part of the next century.

The Federal Government, through USDA ARS, and the State of Texas through Texas Tech University and the Texas agricultural experiment station, have put a comprehensive, integrated program in place over the last 11 years in which 20 senior scientists are today working to develop improved crop plants and production systems that will provide for economically optimal crop production under variable extreme environmental conditions.

Total funding for the program in fiscal year 1990 will be more than $2.5 million from Federal and State sources; $1.6 million of this amount is provided through USDA ARS.

Our appropriation request for fiscal year 1991, the 12th year of the plant stress and water conservation program, emphasizes the need for program consolidation and to a central laboratory to enhance the synergistic development of innovative strategies of scientific experimentation.

The total cost of the laboratory is estimated to be $17 million. An appropriation of $8.25 million is requested for construction of phase

two of the laboratory. Construction funds of $500,000 were appropriated for the current fiscal year for phase one of laboratory construction.

Completion of architectural and engineering plans for the lab will be achieved through the use of designated unspent funds previously appropriated laboratory planning, together with an additional $600,000 of planning funds requested today.

The additional planning funds are necessary due to the scaling down of our laboratory plan to $17 million from what would today be a $30 million facility.

Further, an appropriation of $250,000 is requested for expansion of the molecular biology research program linking the continuum of plant genetics and breeding to the newest molecular biotechnologies.

This research will focus on understanding the genetic control of plant mechanisms which result in drought and heat tolerance. With the assistance of Congress, this program will significantly impact the growth of plants in the changing harsh environments that will continue to be called upon to be major areas of food and fiber production.

Mr. Chairman, we appreciate very much your support and your continuing interest in this extremely important and timely research program. We are grateful for your help.

Mr. WHITTEN. Thank you very much. We do have a background and ties with Texas.

Dr. CURL. Yes, sir.

Mr. WHITTEN. We are faced with what we can do within the limits. We will do our best.

Dr. CURL. Thank you very much. We certainly appreciate your help.

[Dr. Curl's prepared statement follows:]

PUBLIC STATEMENT
BEFORE THE APPROPRIATIONS SUBCOMMITTEE
ON AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES

ON BEHALF OF

A REQUEST TO ENHANCE PROGRAM SUPPORT, COMPLETE LABORATORY PLANNING,
AND CONSTRUCT PHASE II OF A RESEARCH LABORATORY
(AUTHORIZED BY PUBLIC LAW 100-339) IN CONJUNCTION WITH THE
USDA/ARS PLANT STRESS AND WATER CONSERVATION PROGRAM AT
TEXAS TECH UNIVERSITY
LUBBOCK, TEXAS

Presented by

Dr. Sam E. Curl
Dean
College of Agricultural Sciences
Texas Tech University

March 29, 1990
Washington, D. C.

The Honorable Jamie L. Whitten
Chairman, Appropriations Subcommittee on Agriculture,
Rural Development, and Related Agencies and
Chairman, Committee on Appropriations
United States House of Representatives

The Honorable Larry Combest
Congressman for the 19th Texas District
United States House of Representatives

SUMMARY

REQUEST FOR ENHANCED PROGRAM SUPPORT, NECESSARY FUNDING FOR COMPLETION OF LABORATORY PLANNING, AND $8.25M IN PHASE II CONSTRUCTION FUNDS FOR THE USDA/ARS PLANT STRESS AND WATER CONSERVATION LABORATORY AUTHORIZED IN 1988 BY P.L. 100-339. The USDA/ARS PROGRAM AND LABORATORY ARE LOCATED AT LUBBOCK, TEXAS IN COOPERATION WITH TEXAS TECH UNIVERSITY AND THE TEXAS AGRICULTURAL EXPERIMENT STATION.

SPECIFIC ACTION REQUESTED OF THE COMMITTEE: It is requested that Congress appropriate $8.25M to fund the construction of Phase II of the Plant Stress and Water Conservation Laboratory authorized by the 100TH CONGRESS through PUBLIC LAW 100-339. The total cost of the laboratory is estimated at $17M. Construction funds of $500,000 were appropriated for the current fiscal year for Phase I of Laboratory Construction. We will request funds to complete construction of the laboratory from the FY 1992 budget. Completion of architectural plans for the laboratory will be achieved through use of designated-unspent funds ($413,000) previously appropriated for laboratory planning together with an additional $600,000 of planning funds herein requested. The building will be constructed on the Texas Tech University campus on a 50 acre tract of land leased to USDA/ARS by the Texas Tech University Board of Regents.

A request for a total plant stress and water conservation research appropriation of $1.85M is also made to fund the USDA/ARS program budget at Lubbock for FY 1991. This request includes increased research funding of $250,000 to enhance the molecular biology research program linking existing plant genetics and breeding experiments with the newest molecular laboratory biotechnologies. The expanded research will focus on understanding the genetic control of plant mechanisms which facilitate drought and heat tolerance in crop plants.

JUSTIFICATION: The action of the federal government in 1988 through PUBLIC LAW 100-339 authorizing a plant stress and water conservation research laboratory and program at Lubbock, Texas was timely and will have a substantial impact on food production and environmental quality for decades to come. The Greenhouse Effect resulting from increased atmospheric carbon dioxide, Global Warming induced climatic changes, and the extensive drought of the summer of 1988 are ready examples of the fragility of our managed and natural ecosystems, and the potential for reduction in food and fiber quantity from even modest changes in weather patterns.

The formal plant stress and water conservation program was initiated in 1979 after 20 years of feasibility studies and planning by agencies of the federal government. The federal government through USDA/ARS, and the State of Texas through Texas Tech University and the Texas Agricultural Experiment Station, have put a comprehensive-integrated program in place over the last 11 years in which 20 senior scientists are today working to develop improved crop plants and planting systems that will provide for economically optimal crop production under variable-extreme environmental conditions. Scientists with expertise in the broad areas of genetics, breeding and molecular biology; biochemistry and physiology; and climatology, soil science and systems research have research programs poised for the challenges of the predicted climatic changes forecast within the next several decades. This program will be greatly enhanced, and its potential fulfilled, with the construction of a laboratory on the Texas Tech campus in conjunction with a broad array of established basic sciences. Additional program dollars will fill existing gaps in the continuum of technology transfer from laboratory molecular technologies to field applications of genetically modified plants exhibiting improved stress tolerance.

INTRODUCTION

Mr. Chairman, I greatly appreciate the opportunity to appear before the Committee today to request that Congress appropriate $8.25M to fund construction of Phase II of the USDA/ARS Plant Stress and Water Conservation Laboratory at Lubbock, Texas authorized by the 100TH CONGRESS through PUBLIC LAW 100-339, and $600,000 to facilitate completion of laboratory planning. We are also requesting that Congress appropriate $250,000 to enhance the molecular biology research program linking existing plant genetics and breeding experiments with the newest molecular laboratory biotechnologies. The expanded research will focus on understanding the genetic control of plant mechanisms which facilitate drought and heat tolerance in crop plants. This vital research is encompassed in the comprehensive nationwide research mission of the U. S. Department of Agriculture/Agricultural Research Service, and the research program implements the recommendations of the Plant Stress and Soil Water Conservation feasibility study prepared by the USDA/ARS.

The action of the Federal Government in 1988 through PUBLIC LAW 100-339 authorizing a plant stress and water conservation research laboratory and program at Lubbock, Texas was timely and will have a substantial impact on food production and environmental quality for decades to come. The Greenhouse Effect resulting from increased atmospheric carbon dioxide and other gases, Global Warming induced climatic changes, and the extensive drought of the summer of 1988 are ready examples of the fragility of our managed and natural ecosystems, and the potential for reduction in food and fiber quantity from even modest changes in weather patterns.

The background setting for the problem which the research program addresses is found in Senate Document 59, the feasibility study conducted by the Science and Education Administration of USDA in 1977, and the statement of Texas Tech University submitted for the record before this committee on March 26, 1979. We will not repeat this information, as we believe the record is replete with scientific and economic documentation prepared by a select committee which describes the conditions of the region and the research required to seek viable solutions to a complex set of critical problems confronting the areas of agriculture, natural resource conservation and environmental protection. The need for a comprehensive, multidisciplinary, long term basic science research program is obvious. Texas Tech University has taken the lead in the development of a cooperative research program with the USDA/ARS, the Texas Agricultural Experiment Station, colleges, universities, and federal laboratories throughout the region, agricultural producers, the agribusiness industry, and private research organizations.

BACKGROUND

The key planning events involving Texas Tech University which have taken place in conjunction with the development of the research program and laboratory to date are as follows:

1975-1976 Preliminary discussions with officials of the U. S. Department of Agriculture and members of the Congress.

1977-1978 Congress appropriated $100,000 for a feasibility study. The study team concluded that there was an urgent need for a plant stress and water conservation research program and that Lubbock, Texas, was the ideal location for a laboratory facility. A later decision to locate the facility on the campus of Texas Tech University, in conjunction with the College of Agricultural Sciences, finalized the first major step in the development of the program.

1978-1979 Congress appropriated $800,000 for the preparation of a research program plan and architectural and engineering plans for the appropriate laboratory in which to carry out the proposed research. The Science and Education Administration in August, 1979, transferred a USDA/ARS scientist (plant physiologist) to Lubbock, Texas to serve as a cooperative scientist

working with Texas Tech and Texas Agricultural Experiment Station scientists on environmental stress mechanisms in sorghum and cotton. Texas Tech provides office and laboratory space, use of the library, computer, and other University facilities as well as extending full faculty privileges to the USDA/ARS scientists.

1983-84 Congress appropriated $500,000 for completion of the architectural and engineering plans.

1984-85 Congress appropriated an additional $150,000 for support of the ongoing cooperative research program, bringing the total annual funding for the research program to $900,000 ($525,000 in Base Funds and $375,000 in Formal Budget Funds).

1985-1986 Congress appropriated an additional $250,000 for support of the ongoing cooperative research program, bringing the total annual funding for the research program to $1,150,000 ($525,000 in Base Funds and $625,000 in Formal Budget Funds).

1986-1987 Congress appropriated $1,150,00 ($525,000 in Base Funds and $625,000 in Formal Budget Funds).

1987-1988 Congress appropriated an additional $250,000 for support of the ongoing cooperative research program, bringing the total annual program funding to $1,400,000 ($525,000 in Base Funds and $875,000 in Formal Budget Funds).

1988-1989 Congress passed and the President signed into law PUBLIC LAW 100-339 which authorizes construction of the Plant Stress and Water Conservation Laboratory on the campus of Texas Tech University.

Funding of the Cooperative Plant Stress and Water Conservation Research Program

Year	Base Funds	Formal Budget Funds	Congressional Add-On Funds	Total Funds
1980	-0-	-0-	$200,000	$ 200,000
1981	$200,000	$100,000	$100,000	$ 400,000
1982	$400,000	$ 50,000	-0-	$ 450,000
1983	$525,000	$225,000	-0-	$ 750,000
1984	$525,000	$225,000	-0-	$ 750,000
1985	$525,000	$225,000	$150,000	$ 900,000
1986	$525,000	$375,000	$250,000	$1,150,000
1987	$525,000	$375,000	$250,000	$1,150,000
1988	$525,000	$625,000	$250,000	$1,400,000
1989	$525,000	$875,000	-0-	$1,400,000
1990	$725,000	$875,000	-0-	$1,600,000
Request 1991	$725,000	$875,000	$250,000	$1,850,000

RESEARCH MISSION AND ACTIVITY TO DATE

The plant stress and water conservation research program is committed to understanding the basic principles of plant growth and development under conditions of thermal and water stress, and to use this knowledge to produce new crop varieties and management systems that minimize the impact of climatic extremes. More specifically, the program determines avoidance, tolerance, and survival mechanisms associated with plant growth and development under water and thermal stress; it relates these mechanisms to the dynamics of water and nutrient transport within the soil-plant-atmosphere continuum; it defines the extent of genetic variability of the mechanisms; and it seeks to exploit the latest techniques of molecular biology to find and/or create unique crop germplasm which is genetically stress resistant.

Research is designed to support the goals of the USDA/ARS by:

- Strongly interfacing the results of the Plant Stress and Water Conservation (PSWC) program with other state and federal research programs, and with agricultural industries.
- Conducting the PSWC program in concert with the national USDA/ARS plan, and under the overall leadership of the national program staff of USDA/ARS.
- Concentrating research efforts toward improving the efficiency of crop production while conserving natural resources and maintaining water quality.

Three research thrusts support the program mission in accordance with plans established by a select committee at the time the program was initially conceptualized, and subsequently approved by the agencies committed to conducting the research. Research is being conducted in genetics, breeding and molecular biology; biochemistry and physiology; and climatology, soil science, and cropping systems.

Genetics, Breeding and Molecular Biology. Emphasis is on the evaluation and improvement of the cotton, wheat, sorghum, and forage genomes for improved water use efficiency and tolerance of drought and extreme thermal conditions. Cotton, sorghum and wheat regeneration from cell suspension cultures provides the basis for molecular-genetic manipulations of stress tolerant characteristics. Transgenic cotton plants, with bacterial marker genes have been regenerated to test the adequacy of the cotton transformation system. Numerous cell culture systems, and plants regenerated from them, are being utilized in the search for modified germplasm exhibiting tolerance for extreme environments. Variability in the production of heat shock proteins facilitating thermal tolerance has been identified as a genetically controlled characteristic in wheat, sorghum and cotton plants in the field, and cells in the test tube. Enhanced rooting systems of selected crops have been identified and tested in various newly modified and traditional production systems. Studies on guar and sunflowers have shown their adaptation to a wide range of climatic extremes. Genetic differences in the photosynthetic rates of sorghum have been identified and related to improvements in water use efficiency. Seedling establishment has been shown to be associated with a root growth-temperature interaction in forage species.

Biochemistry and Physiology. Studies in this area have defined the impact of enzyme kinetics as related to thermal stress and the synthesis of heat shock proteins. Researchers have shown that enzyme efficiency is related to the indigenous origin of crop germplasm, that crops have a very narrow temperature optimum (a "Thermal Kinetic Window"), and that plants use the physiological process of transpiration to maintain these desirable temperatures.

Climatology, Soil Science, and Cropping Systems. Technology has been developed to quantify root systems under field conditions. Research has shown that the area-wide cotton yield decline in the Southern High Plains is associated with reduced fertility and irrigation. A model has been developed and tested which separates plant transpiration from soil water evaporation. A cotton production system that integrates water, fertility, variety, and plant spacing has been developed and shown to improve cotton yields. Forage species and production systems have been identified that are highly adapted to semi-arid climates.

THURSDAY, MARCH 29, 1990.

NUTRITION AND FOOD SAFETY

WITNESS

DR. PATRICIA B. SWAN, FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

Mr. WHITTEN. We will proceed to the next bell, and then I will have to interrupt.

Doctor Patricia B. Swan.

Dr. SWAN. Thank you, Mr. Chairman.

My name is Patricia Swan. I am Vice Provost for Research and Advanced Studies at Iowa State University, and also dean of the graduate college there.

Today I am here to represent the views of the Federation of the American Society for Experimental Biology. We are seven professional societies with a membership of around 30,000 biomedically-related scientists. We have scientists in every educational scientific research, clinical research institution in the country.

We are proud of that fact that since about 1912 when we originated we have counted among our number 116 Nobel laureate scientists.

We thank you for this opportunity today to express our views to you and hope that you will accept our written testimony in the record.

Mr. WHITTEN. Your complete statement will appear in the record immediately following your remarks. As I said earlier, we just have to do the best we can.

Dr. SWAN. I would like to emphasize two points to you here. One is that there are two aspects of the department's budget that we have particular concern for and wish to support.

First, the competitive grants in nutrition, which are part of the national research initiative now. As you well know, you have funded the competitive grants in human nutrition since 1978. They have played a very important role in the research in basic, normal human nutrition. We ask that you continue support of those grants. We would further ask that you would support them at about the level of $5 million.

We urge your attention to the food safety initiative, as well, and we would like to point out one thing: the nutrition and the food safety initiatives in the current budget before you are rolled together. Each is very important, but they are very different. We would like to urge that they be separated so that one can pay attention separately to normal human nutrition and food safety.

Mr. WHITTEN. We are going to have to go vote. Thank you very much for your appearance.

Dr. SWAN. Thank you.

[Recess.]

[Dr. Swans prepared statement follows:]

FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

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AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY
AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS
AMERICAN ASSOCIATION OF PATHOLOGISTS
AMERICAN INSTITUTE OF NUTRITION
AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Affiliate Member
AMERICAN SOCIETY FOR CELL BIOLOGY

WILLIAM L. DEWEY, Ph.D.
President

JOHN R. RICE, C.P.A.
Acting Executive Director and Comptroller

STATEMENT OF

PATRICIA B. SWAN, Ph.D.
VICE PROVOST FOR RESEARCH AND ADVANCED STUDIES
DEAN, GRADUATE COLLEGE
IOWA STATE UNIVERSITY

on behalf of the

FEDERATION OF AMERICAN SOCIETIES FOR
EXPERIMENTAL BIOLOGY

before the

HOUSE APPROPRIATIONS SUBCOMMITTEE
on
AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES

on the

FISCAL 1991 BUDGET

for the

DEPARTMENT OF AGRICULTURE

March 29, 1990

Mr. Chairman and Members of the Subcommittee:

My name is Patricia Swan. I am Vice Provost for Research and Advanced Studies and Dean of the Graduate College at Iowa State University.

I appreciate this opportunity to appear before this subcommittee to present the views of the Federation of American Societies for Experimental Biology (FASEB). I currently serve as a member of the FASEB Board.

The Federation consists of seven scientific societies with a combined membership of almost 30,000 biomedical researchers. The members represent every major research, educational and clinical institution in the United States. FASEB has counted 116 Nobel Laureates from among its members since the organization was founded in 1912.

My remarks address two areas of the USDA budget request of direct concern to our members. The first is the traditional Competitive Grants Program which is proposed to become part of the new National Research Initiative. The Initiative is an important proposal aimed at assuring that American agriculture retains its leading role in an increasingly competitive world. As such, it calls for the most serious consideration. However, under the format in which it is presented it does not recognize the importance of human nutrition research which we believe should be funded at $5 million as a separate line item.

The second area of direct concern is the item for Animal Care carried out by the Animal and Plant Health Inspection Service (APHIS). We join with many other research oriented organizations in urging that this program be funded at the $12 million level to assure that the APHIS officials responsible for assuring compliance with the Animal Welfare Act are properly trained and adequate in number.

Other witnesses have described the National Research Initiative in detail. I need not duplicate their remarks here. Members of this Subcommittee are well aware of the public's growing concern over environmental damage, water quality, food safety, and the growing perception of the linkage of diet and health. American agriculture must meet these concerns while maintaining its competitive position internationally.

It can only do this if it has access to the results of the best research available. The necessary research includes both basic and applied. The results of applied research are often dramatically evident to the public and support is more easily justified. But it must not be forgotten that the dramatic "breakthroughs" of applied research are only possible because of the steadily increasing knowledge and understanding of life processes supplied by basic research.

The USDA support for this vital basic research contained in the National Research Initiative reflects an ambitious effort to meet our national challenges. The development of the Initiative's concept is unique in that it has not sprung from one interest group's focus on a particular problem, but rather has grown out of an extremely broad consensus that American society is turning to a range of emerging issues USDA is best positioned to meet.

The National Research Council in its report "Investing in Research," concluded a $550 million research program was needed to meet the challenges presented. The Administration has adopted the concept if not the figures proposed in the report. It is critical that Congress examine the structure of the Initiative as presented to assure it contains the appropriate mix of competitive grants, directed multi-disciplinary teams, institutional support and administrative coordination.

One flaw we see involves a dangerous disregard of the importance of nutrition research. Knowledge of the content and effect of our food should be the starting point for agriculture's efforts to meet its responsibility to the nation's diet and well-being.

Yet in the budget request before you nutrition research is only one component of a line item designated "Nutrition, Food Quality and Health" for which $5 million is requested. By far the larger number of issues addressed under this heading are directed to food processing, packaging, and patterns of consumption.

All of these latter are legitimate responses to clear public concern in these areas. Yet the intensity of that public concern leads us to conclude that whatever funds may be provided under that line item will be devoted entirely or in large part to issues of food quality and safety. Support for critical research in human nutrition would consequently diminish or disappear. In view of the importance of basic research on human nutrition, we urge that it continue to be funded as a separate line item as it now is under the present Competitive Grants Program.

By its nature basic research cannot be productive without long-term stable support. There are no lucrative breakthroughs providing profits that can be used to fund the work of other researchers in their accumulation of knowledge and data.

Yet support for human nutrition research has never reached the levels authorized for it over a decade ago and has in fact declined to $1 million in fiscal 1989. Although increased slightly this year, the program is being maintained at a level too low to take advantage of the important research opportunities now available. Still, important work is being done that is indicative of what more could be accomplished if adequate support were assured.

A nutritionist in Louisiana working on arachidonic acid metabolism with rat models is determining that the evidently beneficial effects of consuming fish oil is dependent upon the ratio of vegetable oil consumed. Another researcher in Iowa is seeking better means of establishing boron concentrations and their nutritional sources. Other research has suggested boron has bone strengthening properties.

Lowering cholesterol through consumption of fish oil and the prevention of osteoporosis, or bone deterioration, are two issues of intense and growing interest on the part of the public. Guidance sought by the public can only come from the data obtained and published by investigators such as those whose work I have cited. The Competitive Research Grants Office could probably provide hundreds of similar instances of basic research in which the immediate

results are not apparent, but without which solutions to public concerns are not possible.

What is true for nutrition is equally true in other fields of basic research. There are demands today for new plant forms that will withstand possible climatic changes, or that can provide their own protection against predators. There are demands for new strains of animals whose products are more acceptable to changing consumer demands. These demands can be met. But the ability to do so is dependent upon the knowledge and data being developed through basic research in many fields. All are critical for the resurgence in American agriculture we all seek.

Turning to the area of animal welfare we urge that funding for animal welfare under the Animal and Plant Health Inspection Service (APHIS) be increased to $12 million. The work of many of our members must depend upon the use of animals. We believe it is important that the public which supports much of our research be assured that these animals are properly used and cared for. APHIS is charged with providing that assurance and it is critical that APHIS have the personnel, resources, and training required to meet this charge placed on it by Congress in amending the Animal Welfare Act in 1985. The increased funding level is recommended only after wide consultation among research organizations and with groups genuinely interested in animal welfare.

I would be pleased to respond to any questions you may have. Thank you.

THURSDAY, MARCH 29, 1990.

CONSERVATION DISTRICT STAFFING

WITNESS

ERNEST SHAE, THE NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS (FOR MR. WETHERBEE)

Mr. WHITTEN. The subcommittee will come to order.

Mr. Wetherbee?

Mr. SHAE. Thank you very much, Mr. Chairman. My name is Ernie Shae, and I am filling in for Bob Wetherbee, who is President of our national association. He has been detained over on the Senate side at a Farm Bill hearing this afternoon, and he asked me to fill in for him. So, without objection, I will present Bob's testimony.

Mr. WHITTEN. We would be glad to do that. The complete statement will appear in the record immediately following your remarks.

Mr. SHAE. Very good. I will just hit a couple of our high points.

Mr. Chairman, as you know, conservation districts coordinate and carry out natural resource management programs at the local level. We work very closely with SCS, ASCS, the Extension Service, and State agencies.

As such, we think we are in a better position than some other groups to evaluate what some of the funding needs are for these agencies.

Every year we prepare a funding resolution, and a copy of our resolution is attached to the back of the testimony that lists our specific line-item recommendations for all of the major agencies with conservation responsibilities.

I am not going to go through all of those. They are listed by line item. But there are two points that I want to emphasize this afternoon. The first is a point that you have heard from other people that have testified so far this year, and it relates to the staffing needs, the manpower needs at the local conservation district level.

It has always been very difficult for us to meet the technical assistance requests that we receive from farmers and ranchers, but the problem was exacerbated back in 1985 when the Food Security Act was passed. At that time we were given a whole new set of farm priorities and we began to assist the Soil Conservation Service in writing soil and water conservation plans to meet the conservation compliance provisions. We wrote CRP plans, we assisted with Sodbuster and Swampbuster provisions, and the work load exceeded anyone's expectations. It has been a mammoth undertaking just to write the conservation plans that were required by that act.

We have, for the past three years, essentially done nothing but write conservation compliance plans. Everything else in the conservation districts that SCS does at the county level has essentially been put on the back burner. Forest assistance, water management, urban conservation, stormwater management, the whole list of activities the districts traditionally are involved with—have been set back so that we could concentrate our full resources on imple-

menting the conservation compliance provisions of the 1985 Farm Bill.

We just completed a survey of our local districts to determine the extent of the work load they are facing today and the manpower shortages they are facing, and we just received it back from the printer today. I left a couple of copies with your staff.

These national results indicate that nationwide we only have about 57 percent of the staff resources that are needed to implement the full range of programs that people come in asking for help for. When you look at the state-by-state breakdowns, the message is generally very consistent. Some States are a little better off than others, but on balance we are short in staff in all of the major areas in which we are asked to provide assistance.

SCS estimates that they are about 3,500 staff years short per year. We think their numbers are very conservative. Our estimates, based on our local districts, are that we need at least an additional 9,000 staff years at the county level. We are not here today to ask the Federal Government to fund all 9,000 of those staff positions. We recognize that State governments have a role, local governments have a responsibility to provide support and funding, but we are seeking increased support for SCS to support and help State and local governments provide the assistance that the farmers and ranchers need to meet the natural resource problems they are facing.

We are specifically recommending that the SCS conservation operations budget be increased by $60 million for Food Security Act help, as well as help to meet the base programs, and we are also recommending that the conservation operations account be increased by $35 million to be targeted for water quality work.

The Congress is currently debating a 1990 Farm Bill. There is going to be tremendous pressure in the conservation title to go beyond conservation and compliance addressing soil erosion problems and addressing water quality problems. We think there are still a lot of unanswered questions, but there are some things we can do. What we can do is provide education, technical assistance, and support to help farmers meet the basic requirements that are being asked of them today.

It is a lot of money, but we would urge you to consider the requests that are being made of farmers to protect the environment as you allocated the scarce Federal dollars that you have to work with.

The second point that I wanted to emphasize in our testimony would be the cost-sharing programs—particularly the ACP program. Without your support, that program would have been terminated many years ago. There have been attempts over the years, as you well know, to zero it out, to eliminate it. Without cost-sharing assistance, farmers and ranchers are not going to be able to implement all of the best management practices that are needed. For that reason we firmly support cost-share assistance to help farmers implement the practices they need.

We have recommended this year an ACP funding level of $215 million. That is up from what it has been last year and for the past several years. We were pleased to see that the Administration this year did not basically terminate the program. They recognized its

importance and I believe recommended a funding level in the range of where it presently is the current fiscal year.

We think we need to add to that base amount and target most of those resources for water quality BMPs and the conservation compliance BMPs.

With that, Mr. Chairman, I'll stop. I understand we are the last witness.

Mr. WHITTEN. Thank you very much. This committee has a record along the lines you mention. Unfortunately, we have been vetoed. Of course, we question what money you have. This last Farm bill is where you try to make the caretakers of the land do something. Testimony before us is that they took big money to come up with a plan when the law says they shall do what the Congress directs. But in the process we didn't direct that, but we don't fuss at them because they had to have a plan.

We agree with what you do, but we don't see where the money is coming from at this time.

Mr. SHAE. Thank you very much.

Mr. WHITTEN. Thank you very much.

[CLERK'S NOTE.—The NACD Workload Analysis Survey was too lengthy for reprint. A copy has been retained on file with the committee.]

[Mr. Wetherbee's prepared statement follows:]

STATEMENT OF
THE NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS
BEFORE
THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES
HOUSE COMMITTEE ON APPROPRIATIONS
ON
FISCAL YEAR 1991 APPROPRIATIONS FOR USDA AGENCIES
MARCH 29, 1990

Mr. Chairman, members of the subcommittee, my name is Robert Wetherbee and I am President of the National Association of Conservation Districts. By profession I am a cash grain farmer from Minnesota. I am honored to be here today to share with you our organization's Fiscal Year 1991 federal funding recommendations for several of the agencies of the United States Department of Agriculture. Attached to my testimony is a chart showing our line item recommendations for the Soil Conservation Service, Agricultural Stabilization and Conservation Service, the Extension Service, Agricultural Research Service, and Cooperative State Research Service.

Before reviewing our specific recommendations, I want to briefly discuss the thoughts, philosophy and concerns that brought our members to make these recommendations.

STAFFING NEEDS

The single largest challenge facing conservation districts and our federal partners in USDA today is meeting the resource planning and technical assistance requests from farmers. This has always been a concern, but the problem was usually manageable. Over the years, we have been able to address a wide range of resource concerns. However, the balance between our workload and available workforce was upset in 1985.

That year Congress enacted the 1985 Food Security Act, causing USDA and conservation districts to reorder their local priorities. From December 23, 1985 until today, most of our efforts at the local level have revolved around helping farmers remain in compliance with federal farm programs. The very survival of many of our farmers required us to service their requests for assistance with the new federal conservation programs and to put other needed resource protection activities on the back burner.

I personally don't think any of us, conservation districts, USDA, or even Congress, clearly understood the amount of work that would be required to meet the planning deadlines set up in the 1985 FSA. Now as we look back over the past five years, it has become very clear that we paid a high price in focusing solely on FSA programs. Requests for assistance on forest lands have gone unanswered.

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Rangeland assistance - unanswered. Flood protection - unanswered. In fact, we have fallen behind on servicing all resource concerns except conservation planning on highly erodible land. NACD believes that we can no longer address conservation of our natural resources in this manner. Our country can ill afford to ignore the needs of some components of our natural resource base in order to protect another.

Our organization has just completed a national survey of conservation districts in order to determine where we have fallen behind in addressing our resource conservation problems. The results are discouraging at best. If we take all of the field work force available for conservation activities; through SCS, state agencies, and conservation districts, our members tell us that we only have 57% of the staff resources needed to address local resource concerns. Looking just at the workload resulting from the conservation title, our members told us that they need a 67% increase in staff if we hope to meet the January 1, 1995 implementation deadline. In other program areas, we need a 77% increase in staff to address non-FSA cropland erosion control; an 83% increase for forestry management; an 84% increase for grazing land management; a 122% increase for water quality management programs, a 66% increase for water conservation activities, a 66% increase for wildlife habitat management; a 93% increase for urban conservation; and a 109% increase for conservation education activities.

This total workload translates into a need for over 9,000 additional federal, state and local field professionals. And that does not take into consideration future changes in federal, state or local laws. The total cost for this increased workforce exceeds $300 million annually.

Obviously, I did not come here today to ask for that kind of increase. I know that even if this subcommittee wanted to provide such an increase, the federal budget would not allow you to. I am asking, however, that this subcommittee make a commitment to cover part of this needed increase. We are recommending that the Soil Conservation Service's budget for conservation operations be increased by $60 million in FY 1991. This money should be targeted to meeting the requirement of the 1985 FSA.

Mr. Chairman, we do not expect the federal government to pick up the entire shortfall in funding to meet the total resource needs of the country. Beyond this increase in federal funding, we fully expect state and local governments to renew their funding commitment to conservation programs. By working together, we can address resource protection concerns and provide land managers with the assistance they are so desperately seeking. Acting alone or failing to act, we can only fail in protecting our resources and our citizens.

WATER QUALITY

From every indication, the 1990 Farm Bill will address agriculture and its impact on water quality. In fact, legislation scheduled to be introduced in the Senate includes a section requiring USDA to provide additional research, education, technical and financial assistance to farmers in order to solve water quality problems.

NACD supports this legislation and assisted in drafting the concepts embodied in the bill. This legislation, and other pieces discussed both in the House and the Senate, call for a new program within USDA that will put an additional strain on SCS and district ability to provide necessary technical assistance. The public is asking agriculture to address water quality problems, and it is preferable that we address water quality now instead of later.

However, when we talk about providing farmers with technical or financial assistance to address these new issues, we must also talk about providing new resources to implement these programs. Mr. Chairman, SCS and districts simply cannot do any more with the resources we currently have. The Food Security Act conservation provisions have brought this to our attention, quite forcefully. As I related to you just a moment ago, we are already falling behind in meeting resource concerns around the country. Adding one more program responsibility without the resources for staffing simply invites failure.

NACD has made several recommendations in order to allow USDA to help farmers address water quality problems. For the Soil Conservation Service, we are recommending $35 million in new funds for increased technical assistance. In order to provide additional financial assistance, we recommend that ASCS's ACP program be increased by about $33 million. To address the research and education components of the water quality program, we recommend that ARS's Soil and Water Conservation Research budget be increased by $16 million and that the Extension Service receive a $10 million increase for water quality educational outreach activities.

Without these new funds, we will fall that much farther behind in our ability to address the resource protection issues of concern to our constituents.

I also want to make a few comments on several of our recommendations that are not directly related to staffing needs for Food Security Act programs or water quality activities.

SOIL CONSERVATION SERVICE

We have recommended an increase in funding for the Small Watersheds program for the next fiscal year. In May of 1989, NACD sponsored a major national conference on this program. Project sponsors from across the country attended and their message was clear to us. The PL-566 program has provided invaluable benefits to communities throughout the nation. However, we are falling behind in addressing watershed protection needs. To move forward once again, we feel that an increase in this program is warranted.

I also want to direct your attention to the Administration's recommendation for the Great Plains Conservation Program. Mr. Chairman, it appears that the message this committee has been sending for years regarding the importance of the Great Plains program has finally been heeded. We support the proposed increase in funding for this program.

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE

The conservation cost-share programs of ASCS are an integral part of our federal conservation effort. NACD recognizes that the 1985 Food Security Act conservation provisions will increase requests for these programs and we are suggesting funding increases in order to meet these needs.

We are also suggesting a fairly large funding increase for the Water Bank program. The President has stated that this country should work towards a "no net loss" goal for wetlands. If we are serious about reaching this goal, we will have to provide more assistance to private landowners to help them protect their wetlands. This suggested increase is in response to this new policy.

COOPERATIVE STATE RESEARCH SERVICE

I also want to call your attention to the line item in our recommendations for sustainable agriculture under CSRS. NACD's recommendation is based on increased interest in this program from farmers throughout the country. You will note that we have targeted **sustainable agriculture**, not low-input agriculture. NACD believes that our emphasis should be on developing agricultural practices that are both environmentally and economically sound and sustainable. After all, if the farmer goes broke with a farming system, or if we cannot feed our citizens, then the system has failed.

We need to provide additional assistance to federal and state research agencies to explore ways of better managing our farming enterprises. The end result may be a reduction in some inputs, but we do not believe that this should be required. Our goal should be to develop systems that ensure that inputs do not have negative impacts on our natural resources and that they maintain farm profitability.

COOPERATIVE EXTENSION SERVICE

Our recommendations for Extension's Pesticide Impact Assessment and Integrated Pest Management programs are designed to be coupled with our recommendations for sustainable agriculture research. Even if we find answers on these issues, they will do us no good unless we can get them into farmers hands and encourage their adoption. We recommend an increase in Extension funding in these areas to accomplish that.

Along with my testimony, I am submitting the results of the workload survey I mentioned earlier. If you desire, we would be pleased to provide copies for distribution to the members of the subcommittee.

Thank you for the opportunity to appear before you today. I would be happy to answer any questions you may have.

NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS
FISCAL YEAR 1991 FUNDING RESOLUTION

	FY90 FINAL APPROPRIATION	FY91 ADMINISTRATION PROPOSAL	FY91 NACD RECOMMENDED
	(in millions of dollars)		
SOIL CONSERVATION SERVICE			
Conservation Operations			
Ongoing Programs	476.9	489.4	496.0
1985 FSA Implementation		0	60.0
Water Quality Initiative		17.6	35.0
River Basins	12.3	10.4	12.5
Watershed Planning	8.8	6.9	12.0
Watershed Operations	179.9	151.1	200.0
RC&D's	27.3	24.9	35.0
Great Plains	20.9	24.6	25.0
TOTAL SCS	726.6	724.8	875.5
Office of Surface Mining (RAMP)	12.0	2.1	20.0
AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE			
Conservation Reserve	1,011.0	2,253.6	2,470.0
ACP	182.4	176.0	215.0
PIP	12.4	12.4	25.0
Water Bank	12.2	12.8	25.0
Colorado River Salinity Control Program	10.1	14.8	15.0
AGRICULTURAL RESEARCH SERVICE			
Soil & Water Conservation Research	73.6	89.0	90.0
COOPERATIVE STATE RESEARCH SERVICE			
Hatch Act	155.1	158.5	160.0
McIntire-Stennis	12.3	13.0	18.0
Rangeland Research	.5	0	1.0
Sustainable Agriculture	4.5	4.5	15.0
COOPERATIVE EXTENSION SERVICE			
General Formula Funds	242.7	246.5	257.0
Earmarked Programs			
Water Quality	5.2	15.5	16.0
Pesticide Impact Assessments	2.6	3.6	4.0
Integrated Pest Management	7.1	7.2	12.0
Renewable Resources Extension Act	2.7	0	15.0
FARMER'S HOME ADMINISTRATION			
Rural Community Fire Protection	3.1	0	3.1
Soil & Water Loans-Direct	5.5	0	14.0
Soil & Water Loans-Guaranteed	1.5	0	0
Watershed Protection & Flood Prevention	4.0	0	8.0
RC&D Loans	0.6	0	1.2

STATEMENTS FILED FOR THE RECORD

Mr. WHITTEN. A number of Members and others who were unable to appear before the Committee in person have asked that their statements be printed in the Record. Those statements received by the Committee will be placed in the record at this point.

[The statements submitted for the Record follow:]

Statement by

Representative Hank Brown

before the

House Appropriations Subcommittee on

Rural Development, Agriculture, and Related Agencies

March 26, 1990

Mr. Chairman, thank you for giving me the opportunity to testify before the subcommittee to discuss funding for the expansion of the National Seed Storage Laboratory (NSSL).

Located on the campus at Colorado State University in Fort Collins, Colorado, the NSSL is operated by the Agriculutral Research Service (ARS), U.S. Department of Agriculture (USDA), and is the comprehensive repository of all available seed strains. Plans for expanding the facility at CSU have been in the works for a number of years. However, overcapacity continues to threaten the laboratory.

In 1988, $2.75 million was appropriated for expansion of the laboratory. Last year, $5.5 million was approved. For FY 1991, the administration has requested $4 million to complete the project. I urge the committee to approve the full amount needed.

The NSSL maintains plant germplasm as a base collection for the United States and, through formal and informal cooperation, for the global network of genetic resource centers. Categories of stocks in storage include basic plant introductions, recently released and obsolete varieties, open pollinated, parental lines and genetic stocks, differential host and virus indicator stocks, and type specimens for future reference.

The laboratory is an integral part of the National Germplasm System (NPGS) of the United States. It provides the genetic diversity necessary to improve crop productivity and to reduce genetic vulnerability in future food and agriculture development, not only in the United States, but for the entire world. The NPGS acquires, maintains, evaluates and makes readily accessible to plant scientists a wide range of genetic diversity in the form of seed and clonal germplasm of crops and potential new crops.

The importance of the NSSL cannot be overstated. Its base collection is not intended to meet the day-to-day needs of plant breeders and other plant scientists, but rather serves as a reserve stock to prevent loss of germplasm and erosion of genetic diversity. However, each year several hundred samples are distributed to scientists and breeders because the NSSL has become the only known source of the materials desired.

Of the over 50,000 plant introductions (PIs) documented since records were first kept starting in 1898, many have proven to be life savers in terms of food productions. For example, PI 178383, an accession of wheat collected from Turkey in 1948, received little attention until the early 1960's, when stripe rust suddenly devastated wheat production in some areas of the Pacific Northwest. Breeders using seed maintained by NPGS soon found that this PI had good resistance to four races of stripe rust. In addition, it also contained resistance to 35 races of common bunt and 20 races of dwarf bunt, all of which occur in the Pacific Northwest. The PI became one of the prominent breeding lines used in Montana, Idaho, Washington and Oregon.

The American sugarbeet industry provides another good example. In 1966, the USDA, in conjunction with private sugarbeet plant breeders, began a cooperative program to breed plant material resistant to the viral disease "yellow wilt." Although yellow wilt had not yet entered the U.S., it had devastated sugarbeet growing areas in Chile and Argentina, and was considered to be a serious threat to spread into California. The breeding program continued for 14 years and has yielded successfully resistant material that was adapted to growing conditions in the U.S. The foresight of this ounce of prevention is only preserved by the security and accessibility provided by the NSSL.

The importance of the laboratory is reinforced by numerous historic examples. But what is even more important is the NSSL's ability to take on immediate and future threats. Right now, the Russian Wheat Aphid continues to threaten two-thirds of the wheat planted in the U.S., approximately 40 to 50 million acres, and much of the barley acreage, about 10 to 12 million acres.

A viable alternative to combat the aphid would be to develop varieties of wheat and barley that are immune to it. As the nation's only germplasm storage facility, the NSSL would play a vital role in producing such a variety.

Clearly, the value of this facility has been demonstrated many times. However, the vital service it provides is threatened by overcrowding. The NSSL houses more than 275,000 accessions. Originally, it was built to accommodate 50 years of seed acquisition. However, the rate of acquisition has far exceeded the original estimates. Plans for expansion to

accommodate future needs have been in the works for several years. Stiffling its full potential, overcapacity continues to pose critical space problems at the NSSL.

Expanded storage facilities are needed to accommodate long-term future growth. Moreover, modernization of the existing facility is also needed to correct operational deficiencies, incorporate technological improvements in temperature and humidity control systems, and to accommodate new storage technologies for genetic material.

Expanding the NSSL has global and historic implications. As the world's population increases and plant germplasm in the wild disappears, it is of long-term global importance that plant varieties not be lost. Expanding the present facility is the most cost effective means by which to increase the national germplasm storage capacity. Again this year, ARS has identified the NSSL as a national priority. I strongly urge my colleagues to approve the $4 million needed to complete expansion of this vital facility.

E (KIKA) DE LA GARZA, TEXAS,
CHAIRMAN
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GEORGE E. BROWN, JR., CALIFORNIA
CHARLES ROSE, NORTH CAROLINA
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U.S. House of Representatives
Committee on Agriculture
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TELEFAX NO.
(202) 225-0510

April 2, 1990

The Honorable Jamie L. Whitten
Committee on Appropriations
U. S. House of Representatives
H-218 Capitol Building
Washington, D.C. 20515

Dear Chairman Whitten:

Enclosed is a letter from my constituent, Mr. Ray Prewett, Executive Vice President of the Texas Vegetable Association (TVA).

TVA is requesting that the letter be made part of the hearing record of the Subcommittee on Rural Development, Agriculture and Related Agencies on the FY 1991 budget for the United States Department of Agriculture.

I would appreciate it if you could accommodate this request.

With best wishes, I am

Sincerely,

E (Kika) de la Garza
Chairman

Enclosure
DLG:ab:bjc

Ray Prewett
Executive Vice President

Texas Vegetable Association

P.O. Box 2648
McAllen, Texas 78502
(512) 687-7158

March 21, 1990

Representative Kika de la Garza
Room 1401 Longworth HOB
Washington, D.C. 20515

Dear Chairman de la Garza:

The Subcommittee on Rural Development, Agriculture and Related Agencies of the House Appropriations Committee is having a hearing that will address the budget needs of the Agricultural Research Service (ARS) of USDA. We respectfully request that this letter be made a part of the hearing record for this committee.

Priority support for agricultural research is needed in three areas: registration and reregistration of pesticides for minor use crops, new approaches for dealing with the diamondback moth on cole crops, and alternatives to EBDC fungicides.

The Agricultural Research Service (ARS) has a strong presence in the Texas Rio Grande Valley. This area produces 10 major vegetable crops on 71,400 acres, which represents about 70% of all Texas production. There is an opportunity to expand vegetable production on some of the citrus acreage that was lost due to a devastating freeze in December, 1989 but the lack of research in the three areas listed above is a major barrier to the future viability of the area's vegetable industry. Recently, some of our vegetable production has moved into Mexico to take advantage of lower production costs including the increasing cost of controlling major vegetable pests.

The Texas Vegetable Association (TVA), is a non-profit trade association that represents 225 members located throughout the state of Texas. We are concerned about the 15,000 to 20,000 agricultural workers idled by the 1989 freeze. The best opportunity for many of these workers to maintain steady employment is to work in some aspect of the labor intensive fruit and vegetable industry of the Rio Grande Valley. We are confident ARS is in an excellent position to contribute to a stronger vegetable industry in our area. Additional funding of approximately $1 million is needed to expand ARS's vegetable/melon research work in Texas at the Weslaco laboratories.

Recently, TVA helped to organize an inter agency/vegetable industry group to plan and prioritize resources that can address a variety of vegetable pest management problems. Texas is an important vegetable producing state, but for too long we have just received a fraction of the funding support needed to address registration problems that have recently become more crucial than ever. Chemical companies are less and less inclined to bring new products to market totally on their own. The cost of registration and reregistration has become prohibitive for many products for minor use crops. We need additional capability in the Rio Grande Valley to conduct efficacy and residue testing of products that deserve support. Residue analysis and related research is becoming increasingly important if we are going to be able to bring new products on line that are safer for the environment.

The Rio Grande Valley produces that one-sixth of the nation's cabbage making it one of the most important cabbage areas in the U.S. The diamondback moth is rapidly changing the acreage and profitability of cabbage production in the area. Cabbage acreage has gone from 14,110 acres in 1981 to 11,380 acres in 1985. Some reduction in acreage is probably necessary to improve prices and increase the cabbage growers' income; however, acreage reductions should be done voluntarily by the growers and not because large acreage is made unmarketable because of damage by the diamondback moth. The increasing cost of producing cabbage and broccoli due to this pest problem threatens all cole crop production unless new cost effective control measures are developed. The diamondback is a major pest for cole crops throughout many parts of the world but surprisingly little research has been focused on controlling this pest. We believe it would be very appropriate for this committee to ask the ARS how much money they are spending on research to control the diamondback moth.

The subtropical climate of the Rio Grande Valley with relatively high humidity makes this area very susceptible to vegetable disease problems. A variety of EBDC products have provided the main line of defense against these diseases. It appears that several EBDC products may not be available in a short period of time. The remaining alternatives are more expensive. As the number of available products decline product rotation because difficult if not impossible and we are more likely to experience resistance problems. To avoid this trap we need more research on alternatives to the EBDC's.

What is ARS doing to provide alternative control measures when many of the EDBC compounds will no longer be available? Do they have a research effort focused specifically on this major problem area?

The Africanized honeybee is now only about 150 miles south of the Rio Grande Valley. A new facility is being designed to house expanded research work on this bee, but more support is still needed to expand research on queen management and pollination to cope with the inevitable establishment of the Africanized bee in our area.

We will appreciate consideration by the Congress of this request for expansion of agricultural research at the ARS laboratories in Weslaco. Thank you for your assistance.

Sincerely,

Ray Prewett

RAY PREWETT
Executive Vice President

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26 March 1990

Mr Ray Prewett
Executive Vice President
Texas Vegetable Association
P O Box 2648
McAllen, Texas 78502

Dear Mr Prewett

Your correspondence of the 21st is hand concerning the budget needs of the ARS. You can be certain this will be made a part of the record.

It's always a pleasure to help, and with best wishes, I am

Sincerely

E (Kika) de la Garza, MC

gap

HANK BROWN
4th District, Colorado

COMMITTEE ON
WAYS AND MEANS

Congress of the United States
House of Representatives
Washington, DC 20515

March 29, 1990

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The Honorable Jamie L. Whitten
Chairman
Committee on Appropriations
2362 Rayburn House Office Building
Washington, DC 20515

Dear Jamie:

Enclosed is a copy of Mr. Gilbert Lindstrom's, Chairman of the Farmer Advisory Committee to the ARS USDA Research Station at Akron, Colorado, statement regarding the proposal for funding to expand research at the station.

On behalf of Mr. Lindstrom, I am requesting that his testimony be submitted for the record.

Many thanks for your consideration.

Sincerely,

Hank Brown
Member of Congress

HB/cd

Enclosure

Many thanks!

March 27, 1990

Congressman Jamie L. Whitten
Chairman, Subcommittee on Rural Development,
Agriculture, and Related Agencies
Room 2362
Rayburn House Office Building
Washington, D.C. 20515-6016

Dear Congressman Whitten:

Enclosed is a statement in support of our request for additional funding of $980,000 for urgently needed research at the USDA-Agricultural Research Service Research Station at Akron, Colorado. We request that this testimony be included in the record of the Subcommittee.

Sincerely,

Gilbert Lindstrom
Chairman, Farmers Advisory
Committee to the USDA-ARS
Akron, Colorado Research
Station

enc.

STATEMENT OF MR. GILBERT LINDSTROM, CHAIRMAN OF THE FARMER ADVISORY COMMITTEE TO THE ARS-USDA RESEARCH STATION AT AKRON COLORADO BEFORE THE HOUSE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES. APRIL __ 1990

This is an urgent request for increased funding for research at the USDA-ARS Central Great Plains Research Station, Akron, Colorado. The research detailed in the following pages has the potential to revitalize the economy of rural areas in the Central Great Plains of Colorado, Kansas and Nebraska.

New cropping systems that maximize the use of precipitation can mean increased profits for farmers and ranchers on 24 million acres in the Central Great Plains.If these research findings can be refined and are adopted by farmers, a potential increase in gross income in Colorado alone would be $275 million per year. If only 50% of the farmers adopt the practices the impact would still be over $137 million per year. Equal adoption rates in Nebraska and Kansas would at least quadruple the impact.

PRESENT ECONOMIC SITUATION:

1. In Colorado, 2.5 million acres of wheat are grown each year in a wheat-fallow system. Therefore each year there is also 2.5 million acres of fallow land that produces no crop. Wheat production in eastern Colorado has had an average total farm gate value of $235,000,000 per year since 1980. Gross returns per acre, based on the wheat-fallow system, is about $47 per acre per year.

2. Projections of USDA-ARS and Colorado State University scientists are that a 3 year rotation would increase farm gate income $55 per acre compared to wheat-fallow. This means an added gross income of $275 million per year. If only half of the farmers adopt the new rotations the increase in gross income still would be over $137 million per year.

NEEDED RESEARCH AND TECHNOLOGY TRANSFER:

1. Research emphasis will be placed on farming systems that increase precipitation use efficiency, reduce erosion, preserve water quality and increase farmer profits.

2. A vigorous campaign will be launched to transfer the new technology to the farm. A network approach with on farm research-demonstration activities would be the key component. Economic analysis will be an integral part of the on farm tests.

FUNDING NEED:

1. $980,000 per year for 8 years to the ARS-USDA Great Plains Research Station at Akron, Colorado with cooperative agreements that share the funding with the Nebraska, Kansas and Colorado State Experiment Stations.

POTENTIAL RETURN ON RESEARCH INVESTMENT:

1. The total investment $7.8 million for the 8 year funding period could return nearly $2 billion in the three states in only 5 years.

ENVIRONMENTAL BENEFITS

1. Improved erosion control via crop residue maintenance on the soil.
2. Improved ground water quality via reduced leaching of fertilizer.
3. Reduced use of pesticides via new crop rotations that impact weed, disease and insect problems.
4. Integration of crop/animal production systems that will enhance rural revitalization.

CENTRAL GREAT PLAINS RESEARCH STATION
USDA-ARS, Akron, CO

New Crop and Soil Management Systems

An Opportunity to Increase Farm Profits in Eastern Colorado

A RESEARCH PROPOSAL FROM CONCERNED WHEAT FARMERS
AND RANCHERS IN EASTERN COLORADO

Justification:

Economic strength, social stability and a sustainable, environmentally acceptable agriculture depend on maximizing water use efficiency throughout the Great Plains region. Present cultivation practices, using the wheat-fallow system have resulted in extensive erosion by wind and water and a dependence on government subsidies. Saline seep development indicates inefficient water use in many areas. Conservation tillage practices to control soil erosion further compound water problems because of enhanced infiltration of water in the subsoil. When this water is not used by crops, it accelerates movement of soluble salts and agricultural chemicals into the ground water or creates unproductive seep areas. National concerns for promoting an economically sustainable agriculture, which is environmentally sound, give impetus to the need to develop dryland cropping systems that promote more efficient use of soil and water while protecting the environment. New cropping systems that maximize the use of water can mean increased profits for farmers and ranchers on 29 million acres in the Central Great Plains.

Present Economic Situation:

Winter wheat is the primary dryland cash crop produced in the Central Great Plains. In Colorado alone, 2.5 million acres of wheat are grown each year. Wheat production is almost all in a wheat-fallow system. Therefore, each year there is also a 2.5 million acres of land that produces no crop. Wheat production in eastern Colorado has averaged 75 million bushels yearly since 1980 with a total farm gate value of $235,000,000 per year. Gross returns per acre, based on the wheat-fallow system, is about $47 per acre per year.

Preliminary research results of USDA-ARS and Colorado State University scientists project that adoption of new crop production systems could increase farm gate income 2.5 times in eastern Colorado. Extended rotations with fewer summer fallow periods will permit production of more crops per unit time and a wider diversity of crops. Projections are that a 3 year rotation like wheat-corn-fallow would increase farm gate income $55 per acre per year compared to wheat-fallow. This means an added gross income of $275 million per year on the 5 million acres currently in a wheat-fallow cropping system. Adoption of a continuous cropping system is projected to increase farm gate income $90 per acre compared with wheat-fallow. This would mean $450 million per year of added income. However, because of extremely limited

moisture conditions in some years, continuous cropping may not always be possible. Additional research on flexible cropping systems, wherein soil moisture supply at seeding and expected growing season precipitation can be evaluated and risk probabilities determined is needed.

Similar economic benefits will be obtained across other wheat growing areas in the Central Great Plains.

Needed Research and Technology Transfer:

Information is lacking regarding the match or synchronization of crop production systems with particular climate and soil conditions, and best rotations for utilization of precipitation and sustainability. The ARS facilities and expertise at the USDA Central Great Plains Research Station combined with those of Colorado Agricultural Experiment Station offer a unique opportunity to expand this team research effort with the specific objective of developing dryland farming systems for the Central Great Plains. Emphasis will be placed on farming systems that increase precipitation use efficiency, reduce erosion, preserve water quality and ensure economic sustainability. Specific projects include: 1) Evaluation of selected crop rotations both on station and over a range of climate-soil situations in eastern Colorado; 2) Identification of alternative dryland grain and forage crops to be used in rotation; 3) Evaluation of tillage needs and weed control practices; 4) Fertility needs of crops within rotations; 5) Net income and income variability of rotations; 6) Soil erosion control; 7) Water use by crops within each rotation.

Modern agricultural research and technology transfer must address problems on a "system basis". Dryland farmers today are managers of complex production systems involving plants, animals, soil, climate, economics and technology. A vigorous communication effort in technology transfer therefore is also necessary is research findings are to bring new economic life to the Central Plains in a reasonable time frame. A network approach to technology transfer will be used with on farm research-demonstration activities as a key component. It is critical that the communication and adoption of new information to the user be achieved as rapidly as possible.

Funding:

A total of $980,000 per year for 8 years to USDA-ARS is requested. Funds will be allocated as follows:

- $535,000 to the ARS-USDA Great Plains Research Station at Akron Colorado, for development of alternative crops, tillage practices, crop sequencing, fertilizer needs, weed and disease control techniques, and erosion control technology.
- $445,000 to the Colorado Agricultural Experiment Station, through a cooperative agreement, to further develop practical crop management systems specifically designed for eastern Colorado soils and climate. Field scale experiments with cooperating farmers will be conducted to expedite the direct transfer of new technology to farmers and other components of agribusiness such as bankers, supplies of fertilizers and chemicals, and other government

agencies. Opportunities for integrating cropping systems with livestock production will be explored and range tested at Colorado State University's Eastern Colorado Range Station located near Akron, Colorado.

Potential Return on Research Investment for Colorado Farmers and Ranchers:

Assuming adoption throughout eastern Colorado of a wheat-corn-fallow rotation or a similar 3 year rotation, the investment in research ($7,840,000 over an eight year period) would lead to an increase in gross income of $1.37 billion over a five year period (based on present corn and wheat prices). If only 50% of the farmers follow our recommendations, the increase in gross income would be about $690 million over a five year period. In either instance, the return on this investment in research would be excellent. See Table 1.

TABLE 1
Returns on Research Investment

Program	Costs-8 Yrs. ($ Millions)	Returns-5 Yrs. ($ Billions)	Farm Gate Income ($ Billions)
Status-Quo	-	-	1.2[1]
Planned Program			
100% Adoption[2]	7.84	1.4[3]	2.6
50% Adoption[2]	7.84	0.7	1.9

(1) Eastern Colorado wheat-fallow production system has farm gate value of $235,000 per year or about $1.2 billion for 5-year period.
(2) Adoption of recommendations by wheat growers, Eastern Colorado.
(3) Tax return on $1.4 billion at 15% is $210 million. Therefore, the 8 year research investment of $7.8 million returns to the government are over 30 fold. A 50% adoption rate would result in a 15 fold return to the government.

These benefits would be expected to accrue further over time and the return on this investment over a 20 to 25 year period would be far greater. There would also be a multiplier effect on unknown dimensions on the economy of eastern Colorado. Similar adoption rates and economic results could be expected across the Central Great Plains.

Environmental Benefits:

Large environmental benefits accompany the adoption of the new management systems. Soil erosion is decreased via the maintenance of crop residue on the soil surface. Ground water quality is enhanced by reducing the leaching of nitrates and pesticides via improved efficiency of water use by crops. Proposed crop rotations reduce the impact of weeds and ultimately reduce pesticide use for weed, insect and disease control. Finally, integration of crop/animal production systems will enhance rural revitalization.

JON KYL
4TH DISTRICT, ARIZONA
DEPUTY REPUBLICAN WHIP
ARMED SERVICES COMMITTEE
SUBCOMMITTEES
RESEARCH AND DEVELOPMENT
INVESTIGATIONS
GOVERNMENT OPERATIONS COMMITTEE
SUBCOMMITTEES
LEGISLATION AND NATIONAL SECURITY
HOUSING AND EMPLOYMENT

Congress of the United States
House of Representatives
Washington, DC 20515

REPLY TO
WASHINGTON OFFICE
313 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PHONE: (202) 225-3361
DISTRICT OFFICE
4250 EAST CAMELBACK ROAD
SUITE 140-K
PHOENIX, AZ 85018
PHONE: (602) 840-1891
TELEPHONE FOR THE HEARING IMPAIRED
(602) 840-6643

April 3, 1990

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APPNS.CMTE.

The Honorable Jamie Whitten
Chairman
House Appropriations Committee
H218 The Capitol
Washington, D.C. 20515

Dear Mr. Chairman:

The Dean of the University of Arizona's College of Agriculture contacted me recently in support of continued funding for the Southwest Consortium on Plant Genetics and Water Resources. A copy of his letter is enclosed.

If possible, I would appreciate it if you could include the Dean's comments in the Committee record and give them every appropriate consideration.

Thank you, in advance, for your consideration.

Sincerely,

JON KYL
Member of Congress

JK:tg
Enclosure

College of Agriculture
Office of the Dean

THE UNIVERSITY OF
ARIZONA
TUCSON, ARIZONA

Forbes Building, Room 306
Tucson, Arizona 85721
Telephone (602) 621-7621
FAX (602) 621-7196

March 22, 1990

Representative Jon Kyl
313 Cannon House Office Building
Washington, D.C. 20515

Dear Representative Kyl:

The Southwest Consortium on Plant Genetics and Water Resources is developing innovative advances in plant biotechnology relative to agriculture and water use in arid and semi-arid regions. The Consortium is comprised of five institutions: New Mexico State University, Los Alamos National Laboratory, Texas Tech University, The University of Arizona and the University of California at Riverside. Currently, the Consortium is funded by a special research grant through USDA/CSRS. We would appreciate your directing a letter of support to the Honorable Jamie Whitten, House Appropriations Committee, for continued funding at a level of at least $385,000 per year. We urge the continued support of the Southwest Consortium on Plant Genetics and Water Resources for the following reasons:

First, the Consortium addresses the agricultural problems which stem from a shortage of usable water. Secondly, its purpose is to develop innovative advances in plant biotechnology, agriculture and water use in arid and semi-arid land regions. Thirdly, the Consortium is a regional effort with national significance. Fourthly, the Consortium uses a competitive mini-grant process to support collaborative basic research involving at least two of the five participating institutions. Thus, this is not a single-university activity. Lastly, the research has and will continue to provide direct practical and useful information to further our understanding and application of plant biotechnology for crop improvement and water use issues.

In closing, this money has been well used in support of Southwest arid land agriculture for a number of years. We believe it important that this funding be continued. I would appreciate it if you would write a letter of support to the appropriate committee. Thank you in advance for your help.

Sincerely yours,

Eugene G. Sander
Dean

EGS:vh
xc: John Kemp
Margy McGonagill

WILLIAM DONALD SCHAEFER
GOVERNOR

STATE OF MARYLAND
EXECUTIVE DEPARTMENT
WASHINGTON OFFICE
444 NORTH CAPITOL ST. NW #115
WASHINGTON, D.C. 20001

April 3, 1990

The Honorable Jamie L. Whitten
Chairman
Subcommittee on Rural Development,
Agriculture and Related Agencies
Committee on Appropriations
2362 Rayburn House Office Building
Washington, DC 20515

Dear Mr. Chairman:

As you conduct hearings on the FY 1991 Agriculture Appropriations bill, I want to thank you for inviting the State of Maryland and the University of Maryland to submit testimony on our proposal for a Mid-Atlantic Export and Trade Policy Center.

Your support for the establishment of the ten existing agricultural trade centers has helped many states and regions maintain a competitive edge in the international market for agricultural products. Unfortunately, however, none of the existing centers serve states and agricultural producers in the Mid-Atlantic region. In addition, the existing centers do not provide adequate trade information on the full range of agricultural products and services. Fishery products, value-added foods, aquacultural products and technologies, and biotechnology food products are among the areas that receive little attention from existing centers.

Over the last few years I have led trade missions to the European Community (EC) countries, the Middle East, and East Asia. These missions have convinced me that the Mid-Atlantic region could benefit greatly from a Mid-Atlantic Agricultural Export and Trade Policy Center. In order to meet this need, the State of Maryland and the University of Maryland have developed a proposal to create such a center. Faculty from other universities in the Mid-Atlantic region have expressed an interest in participating in the proposed Center. Attached is a copy of the proposal and a statement for the record prepared by Professor Earl Brown of the University of Maryland.

As you can see from the proposal, the State of Maryland and the University of Maryland are prepared to devote substantial resources to establish a Mid-Atlantic Export and Trade Policy Center. Nevertheless, the Center cannot fully meet the needs of Mid-Atlantic agricultural producers without the participation of the federal government. The State and the University are prepared to contribute two-thirds of the funds needed for the project. We hope that you will support our request for a one-third federal share in this promising investment.

The United States has been a leader in the world food market. Your efforts have helped us maintain that edge in an increasingly competitive arena. A Mid-Atlantic Export and Trade Policy Center can help our agricultural producers meet the new challenges they face by helping them identify new markets and opportunities. I hope the federal government will join us as a partner in this effort.

Thank your for giving us an opportunity to present our proposal to your subcommittee. I also want to thank Mr. Robert Foster of your Subcommittee staff for his interest in meeting with Maryland officials to further discuss this proposal.

Sincerely,

William Donald Schaefer
Governor

The Need for a Mid-Atlantic Agricultural Trade Center

Testimony Prepared for the House Subcommittee on Agricultural Appropriations[2]

The United States has a large and serious trade deficit, currently running about 100 billion dollars per year. Many products are no longer competitive in foreign markets. Fortunately, however some products are still very competitive, and food and agricultural products are among them. It is important that every thing possible be done to maintain and even strengthen this competitive advantage where it exits. The establishment of agricultural trade centers, which were authorized in the 1985 farm bill, is one way to maintain a competitive advantage in food and agricultural products.

It is important that these agricultural trade centers be strategically located throughout the United States to avoid gaps and duplication in both products and geographic areas. The ten existing centers do not cover adequately either the complete range of food and agricultural products, nor the important agricultural regions.

The mid-Atlantic region is one region that is not represented. Value added foods, aquaculture, fish and fishery products, biotechnology food products and agricultural services are examples of products that are not covered adequately by existing centers. Creation of the mid-Atlantic

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[1]See attached Proposal and Request for Federal Funds

[2]Prepared by Earl H. Brown, Professor, Department of Agricultural and Resource Economics, University of Maryland, College Park. March 30, 1990

Agricultural Trade Center would correct both of these deficiencies.

Value-added Products The volume of world trade in value-added agricultural products increased about 10 percent annually through most of the 1980s. Worldwide, about one-half of the dollar value of all agricultural trade is now in processed products. Historically, the value of U.S. exports of bulk commodities has surpassed the value of processed agricultural products. However, because of continued growth in world demand for processed agricultural products and the decline in prices of grains and oilseeds, the values of U.S. processed and bulk-commodity exports have recently converged. Only about 5 percent of total U.S. production of processed agricultural products enters world markets, giving the United States about 10 percent of the market.

Research is needed on trade in value-added products to identify the factors that affect demand. How responsive are value-added products to changes in price? What are the effects of advertising and product promotion? What are the effects of trade distorting policies?

Given expected growth in value-added trade and the tremendous U.S. agricultural processing capacity, prospects for growth in U.S. exports appear favorable if markets are understood and if aggressive market development programs are undertaken. In addition to helping the U.S. trade balance, increases in exports of processed agricultural products create economic activity and local employment.

New Agricultural Products and Services Worldwide sales of new agricultural products based largely on biotechnology could run as high as $17 billion per year by the year 2000, up from $25 million in 1987. Products included are genetically engineered crops that are resistant to disease,

insects and unfavorable weather conditions, bovine growth-hormone technology, and single-cell-protein livestock feeds. Prospects for the sale of these products and the sale of related services appear very favorable. A recent study of markets in Taiwan, South Korea and Singapore documented opportunities for U.S. exporters of new agricultural products and services in those countries.

Agricultural-Related Services. Throughout the 1980s, the United States maintained a trade surplus in services. The Office of Technology Assessment (OTA) estimated the size of the surplus in 1984 to be approximately $15 billion. To the extent that worldwide competition in agricultural trade intensifies and rising incomes stimulate demand for more sophisticated food products, demand is likely to increase for technology-based and knowledge-intensive services. In addition, the establishment of uniform rules for trade in services, currently being negotiated in the General Agreements on Tariffs and Trade, would remove many barriers to expanded trade in services. Despite existing import restrictions, OTA estimates the United States exports about $150 billion of services annually, for a market share of about 20 percent.

European and East Bloc Countries. The European Community (EC) has embarked on an ambitious and historic program to eliminate national borders between their countries by the end of 1992. The goal of "Europe 1992" is to eventually achieve a true common market, similar to the United States.

The potential economic impacts are enormous, both within the Community and among its trading partners, particularly the United States. The U.S. is not only the largest supplier of agricultural products to the EC, but also it occupies a prominent position in food processing and distribution within the Community.

The political and economic reforms taking place in the Soviet Union and the East Bloc countries offer an unlimited potential for U.S. exports of agriculturally related equipment, products and services. Competition will be severe from both Japan and the EC.

The Mid-Atlantic Agricultural Trade Center, located near to important sea and air ports, would be in an excellent position to help U.S. firms take advantage of Europe 1992 and increased market opportunities in the Soviet Union and the East Bloc countries.

Pacific Rim. The U.S. trade deficit is especially large with the Pacific Rim countries of Japan, Korea, Taiwan, Hong Kong and Thailand. However, in all of these countries the United States has a trade surplus in agricultural products. This causes both opportunities and problems.

The United States has been exerting pressure on its trading partners to open their markets to agricultural products in direct competition with those produced in the Pacific Rim.

The center would be able to access and/or initiate trade policy and market research to identify eating trends and those premium quality, value-added products foreigners demand. This information will be integrated into the database and disseminated to food, seafood, and aquaculture industries in the region.

Policy Research. The objective of the research component of the Center would be to produce cutting edge policy research that could be used to increase the understanding of economic and political forces that affect world-wide trade of agricultural and natural resource goods and services. The research output of the Center can be expected to have a major impact on U.S. trade policy as a result of the quality of its faculty and strong ties with

the Office of the U.S. Trade Representative, the State Department, the Department of Agriculture, and the World Bank.

The conditions under which international trade is conducted have changed significantly during the past few years, and further changes are on the horizon. World trade has moved toward regional trading groups. In 1987, the United States and Canada signed a Free Trade Bill effectively creating a North American trading block. In 1992 all trade barriers between EEC countries are scheduled for elimination. Japan wants to organize a far eastern trading block. Recently, there have been proposals for free trade between the United States and Mexico. At the same time GATT discussions are underway to reduce trade barriers on a multilateral basis. What effect will these agreements have on the pattern of international trade? What will happen to the market shares of current U.S. exports?

Macroeconomic policies interact in significant ways with agricultural exports and agricultural policies that influence trade. For example, wide swings in macroeconomic policies have dramatic effects on exchange rates. These swings in exchange rates cause an unstable economic environment that makes long term maintenance of export markets difficult even after establishment. There is an immediate need for research which will allow us to better understand the consequences of macroeconomic and exchange rate instability on the cost and efficiency of agricultural export market maintenance and in turn, the implications for benefits of various efforts to enhance agricultural exports.

The Mid-Atlantic Agricultural Trade Policy Center's proximity to Washington, D.C., its strong trade policy component, and its focus on value added exports clearly will distinguish it from agricultural trade centers

established in other regions. The mid-Atlantic center will bring together U.S. and state government officials, foreign government officials, international traders and policy analysts for the purpose of exchanging ideas, improving information flow, and increasing international cooperation on agricultural trade matters. Trade policy makers and analysts will be attracted to the center because it will be the only agricultural trade center with a primary focus on trade policy analysis. In addition, immediate access to federal researchers and information sources will not only improve the proposed trade center's ability to achieve its research objectives, but also will increase the efficiency with which the trade center can provide relevant information to exporters and government officials. Finally, as the only center with a focus on exporting new agricultural products based on biotechnology, the center will take a position of national leadership in the analysis and development of markets for genetically engineered products.

Effectiveness. The effectiveness of the Mid-Atlantic Agricultural Trade Center will depend on two factors: One is having enough funds and personnel to create a critical mass. The universities and the departments of agriculture in the mid-Atlantic region are prepared to redirect or consider redirecting substantial existing and new funds to the center, but these will be not be adequate to provide a critical mass. Federal funds are needed to supplement state funds.

Attracting quality faculty to work on agricultural trade issues is the other factor necessary for a successful center. Twenty faculty in the mid-Atlantic region have indicated they would devote part of their time to trade policy research and education if sufficient funds are received to create a viable center. Included among these are faculty who have had experience as

Assistant Secretary of Agriculture, USDA, Chief Economist, Department of State, three senior economists with the President's Council of Economic Advisors, and various short-term appointments and consultancies with; Treasury Department, US AID, World Bank, Federal Reserve System and numerous private firms, foreign governments and universities. The quality of these "core" faculty will attract other prominent scholars to the center.

Coordination of Activities. The Mid-Atlantic Agricultural Trade Center would cooperate with the World Trade Centers in Washington and Baltimore, the Ports of Baltimore, Newark, Norfolk and Philadelphia and state organizations designed to support international activities. For example, the Maryland International Division was established to coordinate the state's efforts to promote international business development. The Division includes: Office of International Trade, Office of International Business Development; Office of Tourism and Promotion, Export Finance Program, Maryland Port Administration, State Aviation Administration, Maryland Department of Agriculture, Maryland's Sisters Program and the recently created World Trade Center Institute. Other states have similar programs. The activities of the Mid-Atlantic Agricultural Trade Center would not only fill a void that exists for food and agricultural products, but also would complement the non-agricultural activities taking place.

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MID-ATLANTIC AGRICULTURAL EXPORT AND TRADE POLICY CENTER

Proposal

by

The University of Maryland

and

The Maryland Department of Agriculture

March 1990

MID-ATLANTIC AGRICULTURAL EXPORT AND TRADE POLICY CENTER

COOPERATORS: The University of Maryland and the Maryland Department of Agriculture with cooperation from other universities and departments of agriculture in the mid-Atlantic region.

REQUEST: A federal appropriation of $3,866,000 over 5 years to launch the Mid-Atlantic Agricultural Export and Trade Policy Center.

AUTHORIZATION: PL 95-113 authorizes federal funding on a matching basis to create and operate agricultural trade development centers at land grant universities.

PURPOSE: To increase the competitiveness, sales and profitability of producers and agribusiness firms in the mid-Atlantic region who grow and/or market agricultural, food, aquaculture, fishery and biotechnology food products and services.

The focus will be on products and firms with export potential; however, the impact of imports on producers and agribusiness firms in the region will be an important concern.

ACTIVITIES: 1. Conduct cutting edge policy research to increase our understanding of international markets, reduce trade barriers, improve trade policy and increase exports of agricultural and value added food products and services. Emphasis will be given to policies that affect producers and agribusiness firms in the mid-Atlantic, but the research output can be expected to have a major impact on other regions and products.

The research should influence U.S. trade policy because of the experience and quality of the center's faculty. Researchers will, for example, be able to suggest optimal responses to trade policies of other countries and to assess the effectiveness of U.S. policy responses such as export subsidies. Analyses will increase understanding of how changes in macroeconomic policies and exchange rates affect agricultural exports and imports. Studies of bilateral trade agreements and trading blocs should improve the design of policy and long-term market development strategies.

2. Conduct market research to identify and analyze foreign markets for both current and new products and services. Studies of demand, competition and constraints to market penetration and development will be useful to exporters in developing export marketing strategies and reducing risk.

3. Promote products and services for export by participating in international trade shows, organizing trade missions, hosting foreign delegations, and other activities that bring buyers and sellers together.

4. Establish a computerized data labs and libraries to consolidate existing electronic and hard copy sources of agricultural trade data specific to the mid-Atlantic region. In addition, the center will identify relevant trade data sources around the world, and determine the most efficient way to access and modify these data for use by policymakers, agribusinesses and researchers.

5. Conduct regional impact studies to analyze the impact of imports on producers and agribusiness firms in the mid-Atlantic region. These studies should be useful to policymakers in designing policies and to producers and agribusiness firms in developing products and services to remain competitive both nationally and in foreign markets.

6. Prepare publications and conduct educational programs for producers, agribusiness executives and policymakers. Publications will communicate research findings, provide market and policy updates and address technical and practical aspects of export marketing. Educational programs will cover topics such as designing and analyzing alternative trade policies, developing marketing strategies, and how to enter export markets, cross cultural awareness and negotiations.

JUSTIFICATION:

1. None of the 10 federally-funded agricultural trade centers is located in or near enough to the mid-Atlantic region to conduct research and export development activities of benefit to the region. The mid-Atlantic region is an important producer of agricultural, food, aquaculture, fishery and biotechnology products and services. The region has potential for substantial growth and could increase exports to help reduce the U.S. trade deficit.

2. The center's focus on fishery, biotechnology and value added foods and services would make the center different, somewhat unique and complementary to existing centers.

3. The center would coordinate and expand the limited and fragmented trade research and export development work done by individual states in the mid-Atlantic region. Most of the problems and opportunities are similar enough to make a regional center advisable. Federal funding is needed to get the center started and to supplement state and private funds until they can be increased sufficiently to sustain the center.

4. The center's research in agricultural and fishery trade policy could have a major impact on U.S. trade policy because of its location adjacent to Washington, DC and because of the quality and experience of the center's faculty. Furthermore, located

at a university, it could be the major source of unbiased research on these topics in the United States.

BUDGET: The University of Maryland and the Maryland Department of Agriculture currently spend about $100,000 and $140,000 per year respectively on agricultural trade activities. Thus have been some notable accomplishments, but potential exists for doing much more.

The major impediments are 1) insufficient funds to create a critical mass and 2) absence of an organization to coordinate research, education and market development activities. The creation of the Mid-Atlantic Agricultural Export and Trade Policy Center and the receipt of federal funds would eliminate these impediments.

Both the University of Maryland and the Maryland Department of Agriculture have placed high priority on the development of the trade center. Both are prepared to substantial a redirect existing and new funds to the center if federal funds are received. Over the next five years, the University of Maryland is prepared to budget $6,363,000 and the Maryland Department of Agriculture is prepared to budget $2,013,000 (see table). The combined amount of $8,376,000 would give an over match of more than 2:1 of requested amount $3,866,000 in federal funds is received.

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BUDGET: Mid-Atlantic Agricultural Export and Trade Policy Center

Five Fiscal Years, 1990-91 -- 1994-95

	Source of Funds					
	Federal		NonFederal		Total	
	$(000)	%	$(000)	%	$(000)	%
University of Maryland						
Salaries	1571	62	2814	44	4385	49
Operating	953	38	752	12	1705	19
Overhead	---	--	2797	44	2797	32
Total	2524	100	6363	100	8887	100
Maryland Dept. of Agri.						
Salaries	671	50	799	40	1470	44
Operating	671	50	543	27	1214	36
Overhead	---	--	671	33	671	20
Total	1342	100	2013	100	3355	100
Combined: UM and MDA						
Salaries	2242	58	3613	43	5855	48
Operating	1624	42	1285	15	2909	24
Overhead	---	--	3478	42	3478	28
Total	3866	100	8376	100	12242	100

BUDGET: Mid-Atlantic Agricultural Export and Trade Policy Center

First Fiscal Year, 1990-91

	Source of Funds					
	Federal		NonFederal		Total	
	$(000)	%	$(000)	%	$(000)	%
University of Maryland						
Salaries	352	64	301	30	653	42
Operating	198	36	212	21	410	26
Overhead	...	..	489	49	489	32
Total	550	100	1002	100	1552	100
Maryland Dept. of Agri.						
Salaries	100	50	109	40	209	44
Operating	100	50	70	26	170	36
Overhead	...	..	92	34	92	20
Total	200	100	271	100	471	100
Combined: UM and MDA						
Salaries	452	60	410	32	862	42
Operating	298	40	282	22	580	29
Overhead	...	..	581	46	581	29
Total	750	100	1273	100	2023	100

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State of Rhode Island and Providence Plantations
EXECUTIVE CHAMBER, PROVIDENCE

Edward D. DiPrete
Governor

March 28, 1990

The Honorable Jamie L. Whitten
Chairman, Committee of Appropriations
H218 Capital Building
Washington, DC 20515-6015

Dear Representative Whitten:

I am writing to you to again request your support for an appropriation to fund the International Trade Development Center for Aquatic Products which would be located at the University of Rhode Island (under P.L. 99-198, section 1419.1985).

The University of Rhode Island has a national and international reputation for excellence in areas related to the production, management and marketing of aquatic products. The proposed Center would benefit the Northeast region. Given the growing importance of fisheries in the nation's food economy, and the trade deficit of seven billion dollars in 1987, the Center is also important for the national economy.

The University of Rhode Island is willing to commit the required matching funds on behalf of our State and the region.

My second request to you is your support for the appropriation of funds for engineering and first phase construction of a building at The University of Rhode Island for the aquatic and related sciences. This would be located within the College of Resource Development. This request speaks to the growing importance of the aquatic sciences to the nation's agriculture and the vitality of the University's programs. I deeply appreciate your consideration and I look forward to hearing from you.

Sincerely,

Edward D. DiPrete

Edward D. DiPrete
Governor

cc: Congressional Delegation
The Honorable John Sununu

WRITTEN TESTIMONY OF
Dr. John Yopp
Associate Vice President for Academic Affairs and Research
Southern Illinois University at Carbondale

Representing the Illinois Groundwater Consortium

for the

House Appropriations Subcommittee on Rural Development,
Agriculture, and Related Agencies

The Honorable Jamie L. Whitten, Chairman

March 29, 1990

WRITTEN TESTIMONY OF
Dr. John Yopp
Associate Vice President for Academic Affairs and Research
Southern Illinois University at Carbondale
Representing the Illinois Groundwater Consortium

for the
House Appropriations Subcommittee on Rural Development,
Agriculture, and Related Agencies
The Honorable Jamie L. Whitten, Chairman

March 29, 1990

Mr. Chairman and Members of the Committee:

I am pleased to have this opportunity to discuss with you the proposed FY 1990 and FY 1991 programs of the Illinois Groundwater Consortium, which will study the impact of agricultural chemicals on groundwater in Illinois.

The Illinois Groundwater Consortium grew out of an FY 1990 appropriation of $500,000, provided by this subcommittee, to Southern Illinois University at Carbondale (SIUC) to focus on this important topic. As a result of this appropriation, SIUC joined forces with the Illinois State Geological Survey, Illinois State Water Survey, University of Illinois Agriculture Extension Service and the University of Illinois Agriculture Research Station to effectively work together toward providing a scientifically valid basis upon which meaningful agricultural chemical management and regulatory decisions can be based. Information which is needed on the occurrence, transport, and fate of agriculture chemicals in representative hydrogeological settings in Illinois will best be acquired through a joint effort of experts from the above nationally regarded research entities in the State of Illinois.

The information which is gained from these scientific investigations will be disseminated to pertinent constituencies through its incorporation into course materials, extension service activities, and publications. In addition, information acquired by scientists supported through this consortium will also be applicable to addressing agriculturally related impacts on groundwater quality in other states, especially in the midwest.

Status of the Current Program.

The Advisory Committee of the Illinois Groundwater Consortium has been formed, and consists of institutional representatives from each of the Consortium members, and a consortium director has been appointed. The committee has identified both short-term and long-term objectives as part of the scope and purpose of the Consortium activities. The short-term objectives are intended to describe the activities planned during the first funding year. A proposal describing both types of objectives was submitted to the U. S. Department of Agriculture in early March. Two major **short-term objectives** are planned this year:

(1) Funding of Research Projects. Because of the need to begin Consortium activities this year, the process whereby the first year's funding is utilized will be different than in subsequent funding years. First year funds will be used to strengthen and expand identified areas of expertise in the Consortium membership. These areas reflect faculty and staff expertise rather than existing research projects. These projects were also projected by the Consortium partners for the first year because results obtained will guide decision-making on the nature of projects funded in subsequent years. Some of these projects will include studies on the "Effect of Tillage Practices," "Contamination of Wells,"

"Production Practices," etc. A complete list of proposals to be funded during the first year and the first year Consortium budget are attached.

(2) Convene the first Groundwater Research Planning Conference. The Conference is designed to achieve three goals:

(a) facilitate the interactions of researchers who are working in the various areas of groundwater research through paper presentations, roundtable discussions and informal discussion groups;

(b) formalize the process under which the peer review of the groundwater research proposals takes place;

(c) convene the Advisory Committee for discussions on the accomplishments of the first year's activities and plans for the future, including identification of the highest research priorities for addressing Illinois groundwater issues.

Long-Term Objectives. In the next few years, it is hoped that the Subcommittee will provide additional funding so that more of the many projects identified by each member institution of the Consortium can be pursued. A broad based research program will be developed, which will include the following long-term priorities:

(1) Studies of existing and past agricultural and agrichemical practices;

(2) A comprehensive review of existing literature in the area of agrichemical effects on groundwater, including a survey of the current research being conducted by other scientists within Illinois;

(3) Assessment of agriculture practice effects on fate and transport;

(4) An assessment of existing groundwater quality;

(5) An evaluation of contributing agricultural practices;

(6) Predictions of the effects of regulatory or incentive actions as well as alternative strategies to protect groundwater supplies;

(7) A plan to minimize the effects of agricultural chemicals on groundwater;

(8) Use of existing mechanisms for technology transfer and education (e.g., cooperative extension, soil conservation, soil stabilization and conservation, soil and water conservation districts).

The Consortium is requesting an FY 1991 funding level of $1.25 million. The additional funds will provide the means for the Consortium to more adequately focus on these problems at the statewide level. Funding for the second-year program will be channeled to projects falling under five of the above priority areas. A list of these FY 1991 program areas, with their tentative budgets and tentative projects, is attached. The proposals received as a result of a request for proposals (RFP) will be externally reviewed and rated by a panel of distinguished researchers from academic institutions and State agencies. As was true in the first year proposal, 95 per cent of the funds provided to the Consortium will be earmarked for project activities and the Research Planning Conference. In subsequent years priorization of funding objectives will be accomplished through recommendations of the external reviewers and the decisions of the Advisory Committee. It is the Advisory Committee's belief that the highest research priorities would include research in areas of great need but for which there is currently little or no state/federal funding because of budgetary constraints.

On behalf of Southern Illinois University at Carbondale and the Illinois Groundwater Consortium, I wish to thank the Subcommittee for the opportunity to submit this testimony to you. We truly believe that we can meaningfully contribute to the currently deficient body of knowledge on the impact of agricultural chemicals on groundwater, particularly in the midwest, and we hope you will be able to allow us to continue our work during a second year of funding.

ILLINOIS GROUNDWATER CONSORTIUM
First-Year Projects and Budget

Listed below are the projects funded in the first year of the Illinois Groundwater Consortium activities. These projects are listed within the long-term objectives identified by the Consortium Advisory Committee as high priority for research activities within the State.

Objective: Assessment of Agriculture Practice Effects on Fate and Transport of Chemicals

1. Relation between material properties of glacial till and the bulk saturated hydraulic conductivity.

   Total Costs: **$44,520** (1 principal investigator (P.I.)=$4,993; 2 graduate assistants (G.A.'s)=$9,870; Student Worker=$3,600; support costs=$10,050; Equipment=$16,007).

   Institutional Contribution: **$13,778** (1 P.I.=$4993; Support costs=$1,000; Equipment=$7,785).

2. Effects of tillage practices on fertilizer and herbicide retention in soil.

   Total Costs: **$75,000** (1 Researcher=$35,736; Student Worker=$7,119; Support Costs=$16,145; Equipment=$16,000).

   Institutional Contribution: **$20,464** (3 P.I.'s=$20,464).

3. A study of facilitated transport of agricultural chemicals by coloidal materials.

   Total Costs: **$73,665** (2 P.I.'s=$17,971; 4 G.A.'s=$18,660; Student Workers=$1,360; Support Costs=$8,800; Equipment=$25,874).

   Institutional Contribution: **$11,118** (2 P.I.'s=$5,192; 2 G.A.'s=$5,926).

4. Groundwater contributions to atrazine loadings in streams.

   Total Costs: **$74,113** (1 Chemist=$24,407; 1 Researcher=$3,800; Student workers=$5,506; Support costs=$33,900; Equipment=$6,500).

   Institutional Contribution: **$18,470** (4 P.I.'s=$18,470).

5. Sediment yield and water quality from agricultural watersheds in Illinois.

Total Costs: **$18,200** (2 G.A.'s=$12,100; Student Worker=$1,500; Support Costs=$4,500).

Institutional Contribution: **$48,264** (personnel=$8,500; G.A.'s=$21,700; Student Workers=$3,000; Support Costs=$13,000; Equipment=$1,000; other contributions=$13,764).

6. Evaluation of natural abundance N15 value methodology to identify and quantify sources of nitrate in rural, private drinking water wells in Illinois.

Total Costs: **$18,045** (G.A.=$10,145; Student Workers=$3,000; Support Costs=$3,600; Equipment=$13,000).

Objective: Assessment of Existing Groundwater Quality

1. Agricultural chemical contamination of dug and bored wells.

Total Costs: **$91,167** (Personnel=$30,167; G.A.=$11,000; Student Workers=$3,000; Equipment=$12,000; Support Costs=$35,000).

Objective: Evaluation of Contributing Agricultural Practices.

1. Production practices and chemical use in economically viable farms in Illinois.

Total Costs: **$42,820** (2 P.I.'s=$20,940; G.A.=$11,800; Support Costs=$10,000).

Institutional Contributions: **$47,643** (Personnel=$9,500; Student Workers=$2,000; Support Costs=$6,000; Equipment=$4,500; Other Contributions=$25,643).

Objective: Use of Existing Mechanisms for Technology Transfer and Education.

1. First Research Planning Conference of the Illinois Groundwater Consortium.

Total Costs: $12,000

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ILLINOIS GROUNDWATER CONSORTIUM
Tentative Projects and Funding Levels for Program Year 2

Listed below are projects within the long-term objectives identified by the Illinois Groundwater Consortium Advisory Committee. These projects represent areas of highest priority needs within the State of Illinois and areas of staff expertise of the Consortium members. A request for proposals will be issued, depending on the availability of funding for the second year, with these high priority needs identified. Based on the quality of the proposals received, we anticipate that projects would be funded so that these needs are addressed. Cost estimates are preliminary.

1. **Objective: Studies of existing and past agricultural and agrichemical practices - $186,500.**

   - Concentration of pesticides over time - studies of the effectiveness of monitoring programs.

2. **Objective: Assessment of Agriculture Practice Effects On Fate and Transport - $313,500.**

   - Groundwater flow in the saturated zone of surficial unconsolidated deposits
   - Movement and chemical transformation of ultratrace mineral elements in groundwater.
   - Effects of groundwater sample collection protocols on sample representation and integrity.
   - Refinement of laboratory analytical procedures.

3. **Objective: Assessment of Existing Groundwater Quality - $600,000.**

   - The effects of back-syphoning fertilizer-rich irrigation water into irrigation wells.
   - Measurements of absorption of specific chemicals using fate and transport model.
   - Systematic microbial studies.
   - Comparisons of predictions versus actual results (testing of theoretical models).
   - Evaluation of natural abundance 15N value methodology to identify and quantify sources of nitrate in rural, private drinking water wells in Illinois.
   - Baseline shallow groundwater quality in varying hydrogeologic settings in rural areas.
   - Effects of application of lawn/garden chemicals on shallow groundwater quality in urban areas.
   - Indication of agricultural chemical contamination of deep, confined groundwater systems.
   - Role of preferential groundwater flow paths in contamination of groundwater systems by agricultural chemicals.

- Field-scale to regional spatial variations in agricultural chemical concentrations in shallow groundwater.
- Small-scale temporal variation in agricultural chemical leaching to saturated groundwater.
- Long-term evolution of agricultural chemical concentrations in shallow groundwater.
- Microclimatic/meteorological influences on agricultural chemical leaching to saturated groundwater.

4. **Objective: Evaluation of Contributing Agricultural Practices - $100,000.**

- Influence of farm practices and farm businesses on water quality in Illinois - a survey and database using farm management records to obtain details for the state as a whole.
- Programs focusing on chemigation and fertigation practices and results.
- Relational database integrating all aspects of agricultural chemical product information, on-farm usage, physical environment, water quality analyses, etc.
- Geographic information system application to interpretation and presentation of spatially-oriented data.

5. **Objective: Use of Existing Mechanisms for Technology Transfer and Education - $50,000.**

- Second Research Planning Conference of the Illinois Groundwater Consortium.
- Development of soil conservation technical guides incorporating newest information.

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IMPERIAL VALLEY
CONSERVATION RESEARCH CENTER COMMITTEE

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WORKING IN CONJUNCTION WITH
THE IRRIGATED DESERT RESEARCH STATION

P.O. Box 1375
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March 20, 1990

My name is John R. (Dick) Kershaw and I am President of the Imperial Valley Conservation Research Center Committee. Enclosed is a brochure explaining in more detail our committee's long term dedication to agricultural research in any irrigated context.

Recently we listened to testimony by the Secy of Agriculture to Congress concerning the U.S.D.A. Research Plan for Water Quality. The initial thrust by A.R.S. has been concentrated on groundwater quality in the Midwest. It has been a timely and wise effort.

However, our committee would like to strongly bring to the attention of all parties concerned that traditional irrigated practices in our entire Southwest production areas are being severely impacted by recent policies regarding runoff, fertilizers, pesticides and irrigating practices.

One of the primary concerns is the possibility of salt buildup in currently productive ground if changes in method are imposed without due consideration to scientific options and knowledge.

Our Committee is very much aware of the resource all of us in irrigated agriculture have in the U. S. Salinity Laboratory in Riverside, Ca. The models currently being developed by their highly qualified staff are on the cutting edge of intelligent response to the justified demand for water quality. combined with farmer education.

Our committee is pleased to be in complete unanimity with the Salinity Lab in their efforts to serve agriculture and urban interests by way of their efforts towards modernization and capacity.

In particular, we are very excited about the proposed underground drip project to be initiated at the Brawley, Ca. field station as a cooperative effort between the Imperial Irrigation District, the Calif. Water Resources Board, the A.R.S. components from Fresno and the Salinity Lab and our committee. Our committee of successful farmers is pleased to share the financial cost of this vital research. A partial list of salinity trials conducted in Brawley by the Salinity Lab is attached.

In summary, water quality, irrigation practices and salinity are a factual triangle. Ignore the importance of any one of the trio to the perial of the whole. History contains many lost civilizations in testimony to this truism.

Dick Kershaw

Statement of

John W. Beecher, Director of Libraries
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and
President, United States Agricultural Information Network (USAIN)

Prepared for the
Rural Development, Agriculture and Related Agencies
Subcommittee on Appropriations

In Support of the
FY 1991 Appropriations Request for
The National Agricultural Library (NAL)

March 28, 1990

I am John W. Beecher, Director of Libraries at North Dakota State University in Fargo, North Dakota. In my capacity as President of the United States Agricultural Information Network (USAIN), I am submitting this written testimony for the record to support the budget request of the National Agricultural Library for Fiscal Year 1991.

The United States Agricultural Information Network is a nascent organization being formed by individuals and organizations dedicated to broadening access to the national information resource base relevant to agricultural research, education and applied agriculture. The objectives of the network include: providing a forum for discussion of agricultural information issues (especially those relating to information collection, organization and access); taking a leadership role in the formation of a national policy related to agricultural information; and making recommendations to the National Agricultural Library on agricultural information matters. To accomplish

these expectations, USAIN is committed to strengthening agricultural libraries and information services throughout the United States.

USAIN is the first organization developed specifically to provide a national forum through which agricultural librarians might address the myriad issues associated with the collection and delivery of agricultural information in the 1990s. USAIN's charter membership drive was initiated this past winter. It already has a membership of approximately 150 individuals and 30 institutions representing a broad constituency of governmental, educational and business groups. (See attached listing.)

The National Agricultural Library is of supreme importance to all agricultural librarians and information specialists. We rely on the depth of its collections to supplement our local inadequacies; we rely on its initiatives in providing innovative programs and services; above all we rely on its leadership, to which USAIN in great part owes its existence. Perhaps a brief report on USAIN's establishment, its programs, (supported in large measure by the NAL), and its innovative services, will serve to demonstrate the vital role the NAL fills for all agricultural libraries and research units.

In a 1982 report to then-Secretary of Agriculture John Block, the Interagency Panel on the National Agricultural Library, composed of leaders from the library and information fields and from the U.S. Department of Agriculture, strongly recommended that the NAL "coordinate a national network of public and private

agricultural libraries and information centers, including the land-grant colleges and universities, state supported colleges and universities, and other public and private sector organizations involved in agricultural information."[1] In response to this recommendation, the NAL assumed a leadership role in the establishment of such a network, undertaking a series of discussions, workshops and meetings which, six years later, culminated in the formation of USAIN.

The potential of networking is enormous, having significant implications for the economical acquisitions of agricultural books, journals and other materials, coupled with the widest and most effective possible dissemination of those materials. To achieve these goals, the administration of the NAL has recently initiated, developed and expanded a large number of cooperative networking programs. These include cataloging and indexing programs, microfilming of state publications, document delivery for USDA employees, training and internship programs for staff and users, preparation of information products, and research on information technology applications. This latter includes a telefacsimile study, the use of laser media for storage and retrieval of full text documents, and a significant project for automatic digitizing of page images and coding of full text. Forty-five land-grant libraries have committed funding to this latter program, and are currently participating in testing four pilot CD-ROM databases. USAIN members have actively supported and participated in this 4-year project and are hopeful that such projects can be continued and expanded in the near future. Specifically, USAIN supports the proposed Midwest

[1]Interagency Panel on the National Agricultural Library. Assessment of the National Agricultural Library--Final Report to the Secretary. United States Department of Agriculture, Science and Education, Washington, D.C. 1982. p.1.

Agricultural Biotechnology Information Center, a proposal of Iowa State University and several other midwestern land-grant universities with active research programs in agricultural biotechnology. Agricultural biotechnology is a major new research area for land-grant institutions and the NAL; unfortunately, little attention has yet been given to providing the information resources necessary to support researchers and scholars in our universities or agribusiness research laboratories. We do know that the information and publications needed are very expensive, that they are increasingly published in electronic format, and that no one institution or library can afford to collect comprehensively in this research area. The proposed Midwest Agricultural Biotechnology Information Center is an envisioned collaborative approach which would coordinate NAL's efforts with university centers of excellence in subspecialties of agricultural information.

During the past decade, libraries--especially U.S. libraries, including the NAL--have been beset by profound and long-term changes, accompanied by profound and long-term challenges. In less than a generation, almost every function of the library has been altered to some degree by technological advances in electronics, computerization, and telecommunications. New formats, such as CD-ROM and computer software, are expensive to acquire but are essential components of a state-of-the-art library. They are also now considered necessary to meet the constantly rising expectations of our users.

Another problem libraries have had to face is that of rising material costs, especially

for foreign journals. That and currency fluctuations have eroded the U.S. science and technology library community's ability to maintain the integrity of our collections. All the nation's libraries have come to depend on the NAL as a national resource and the repository of "last resort" for maintaining agricultural materials, especially foreign journal subscriptions. Unfortunately, because of budgetary constraints, the NAL has recently been forced to curtail certain acquisition programs and to cancel unique journal titles. The result has been a significant decrease of world-wide agricultural information coverage in the U.S., with serious implications for the agricultural information and research communities; the ability of U.S. libraries and research centers to deliver needed information to users is seriously compromised.

Simply put, the continuing and escalating expense of trying to meet the expanding and legitimate expectations of the agricultural information community has grown beyond current financial capabilities. As we move into the 1990s, there is a need to secure funding well in excess of current appropriations for agricultural information systems if the U.S. is to remain competitive in the world agricultural marketplace.

Therefore, I strongly support NAL's request for $15,773,000 of appropriated funds for Fiscal Year 1991, a proposed increase of $1,097,000. The total request represents an extremely modest sum for a national scientific and technical information resource, one to which all agricultural, educational and research communities look for leadership and support. One which has, in fact, proved itself to be a highly effective catalyst for the efficient and effective use of the national agricultural information base. In

addition, I support the Fiscal Year 1991 request for $3,500,000 for the proposed Midwest Agricultural Biotechnology Information Center as initiated by Iowa State University.

Your support of the proposed NAL budget and Iowa State University's proposed Midwest Agricultural Biotechnology Information Center will have positive implications for all U.S. agricultural, educational, and research units, and will be greatly appreciated by me and fellow members of USAIN.

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IOWA STATE UNIVERSITY

TESTIMONY SUBMITTED TO:
THE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND
RELATED AGENCIES

March 28, 1990

RELATING TO:

THE CENTER FOR DESIGNING FOODS TO IMPROVE NUTRITION
AND
THE UTILIZATION CENTER FOR AGRICULTURAL PRODUCTS (UCAP)

Summary of Requests

The following pages articulate the progress and goals of these two facilities. We are very grateful for the support we have received from the subcommittee in previous years relating to these two very important initiatives. For FY91 our request can be briefly summarized as follows;

The Center For Designing Foods To Improve Nutrition -
Congress allocated $290,000 in planning grant funds in FY89 and $2.3 million in FY90 which is being matched by $4.2 million allocated by the State of Iowa to construct the facility. The Center is seeking assistance in two areas for FY91 - equipment and operations. The inclusion of this center into the ARS Human Nutrition Center Program would be mutually beneficial.
Equipment needs....$3.5 million
Operations needs...$1.5 million

The Utilization Center for Agricultural Products (UCAP) -
The UCAP facility was established in 1988 to help increase new and high-value uses of farm products, diversify agriculture, stabilize the sector's economy, and improve the U.S. position in domestic and international markets. The Center has received significant support from Congress over the past three years. ISU is seeking an appropriation which will be adequate to complete the facility construction and renovation and begin operations assistance.
Construction needs....$6.8 million
Operations needs.....$1.2 million

Center for Designing foods to improve Nutrition

According to *The Surgeon General's Report on Nutrition and Health, 1988*, scientific evidence for links between diet and principal causes of death and disability in the United States is even more compelling than the case made for tobacco and health. The choices consumers have and the choices they make determine the nutritional status of the nation. That makes food options and food choices national issues.

The Agricultural Research Service Program Plan for 1986-92 includes among its high-priority national programs "Adequate Human Nutrition," specifically "knowledge of how food production and processing practices relate to human nutritional needs" and "improved understanding of the relationship between diet and health maintenance."

The 1988 National Research Council report, "Designing Foods: Animal Product Options in the Marketplace," emphasizes the same concerns, noting that
preharvest and postharvest technology need to be aligned to modern standards of adequate human nutrition.

A research program that links food production, processing and distribution to human food selection and consumption is a valuable addition to programs in existing USDA-ARS human nutrition centers.

The ISU Center's mission

The Center for Designing Foods to Improve Nutrition was established at Iowa State University to improve nutrition and health maintenance through understanding food selection and consumption and nutrient utilization in coordination with food production, processing, distribution, and design.

The Center will enhance and coordinate ISU research to

- design and develop new foods to improve nutritional quality and consumer acceptance;
- identify the determinants of food selection and consumption;
- identify in foods the naturally occurring nutrients, protectants, toxicants, and non-nutritive factors that affect nutrient utilization and health;
- improve strategies for predicting and modifying food selection and consumption to ensure the nutritional status of consumers;
- develop educational strategies to improve food selection and consumption; and
- provide information for the development, implementation, and evaluation of food and agricultural policies.

The link with USDA human nutrition research centers

The ISU center complements work at the following USDA human nutrition research centers:

Beltsville--conducts research relevant to 1) human requirements for energy, protein, carbohydrates, lipids, vitamins and minerals; 2) nutrient bioavailability from commonly eaten foods; and 3) development of dietary strategies that can postpone the onset of nutrition-related debilitating disease.

Grand Forks--conducts research to develop for humans recommended intakes of nutrients, with emphasis on trace-mineral requirements that will allow optimal function throughout life.

Tufts--conducts research to explore the relationship between nutrition and good health and to determine the nutritional and dietary requirements of maturing and elderly people.

Baylor--conducts research to define the nutritional requirements that will ensure health in pregnant and lactating women and in infants, children, and adolescents.

Western--conducts research on human nutritional requirements and on nutritional status surveillance, intervention and monitoring; assists in establishing nutritional status and effectiveness of nutrition/food programs.

None of the USDA human nutrition centers is located at a land-grant institution. With a research program that begins with food production and ends with the consumer, the Center for Designing Foods to Improve Nutrition fills a gap in research to improve nutrition and health maintenance. No USDA center has available all the components of food production, food processing, agricultural economics and policy research, nutrition education, and basic nutrition research. All of these components are incorporated into the mission and programs of the center at Iowa State University.

Specialists in agricultural production and biotechnology will work to improve the food farmers raise; food scientists and nutritionists will work to improve the nutritional quality and acceptability of processed foods; economists and specialists in human behavior will analyze the factors that influence what consumers buy and how educational strategies can affect those decisions.

Endorsements of the program have been received from commodity groups, food and feed industry associations, and consumer groups.

ISU research centers/organizations

Among the existing programs that provided the foundation for the Center are these:

The Nutritional Sciences Council

The Nutritional Sciences Council is an interdisciplinary organization established in 1949. More than 60 faculty members belong. It provides seed money for research and sponsors local seminars and national symposia.

The Agriculture and Home Economics Experiment Station

The Experiment Station is Iowa's agricultural research institute. It administers and supports all Cooperative State

Research Service projects in agricultural production, food sciences and processing, economics and policy, sociology, child development, family sciences, human nutrition and public education. Several research centers within the Station are particularly important to the Center for Designing Foods. They include:

The Center for Agricultural and Rural Development (CARD)
CARD is the largest university-based center for research on agricultural economics and policy in the United States. One of its four areas of emphasis is food and nutrition. It is affiliated with the Food and Agricultural Policy Research Institute.

The Utilization Center for Agricultural Products (UCAP)
UCAP is an umbrella organization encompassing research in the Center for Crops Utilization Research, the Meat Laboratory and the Meat Export Research Center. Among utilization projects with goals that support the mission of UCAP are the following: 1) modifying the fatty-acid composition of soybeans, 2) screening for natural sources of valuable properties in starch, 3) identifying and evaluating natural antioxidants, 4) increasing the solubility of soy protein, 5) altering fat composition in processed meats, 6) reducing sodium levels in processed meats, and 7) reducing microbial contamination in meats.

The Agricultural Biotechnology Program
The Agricultural Biotechnology Program is funded by the State of Iowa. In 1988 more than 100 faculty members from five colleges were involved in the program. Projects include research to manipulate the synthesis of fatty acids, proteins, and vitamins in plants and animals.

The research program

The center will enhance and coordinate interdisciplinary research throughout the University. To meet the mission and objectives of the Center, the research program focuses on four main areas:

- **Improving strategies for predicting and modifying behavior in food selection and consumption**
  Research in this area includes studies of intrinsic and extrinsic factors that affect food selection and consumption. Various consumer groups will be studied at the individual, household and community levels. Research results will be used to help plan research in other areas of emphasis.

- **Modifying production and processing to improve the nutritional quality of foods**
  Modifications of agricultural commodities, changes in food-processing procedures, and changes in selection and preparation of foods are part of this research area. The nutritional impact and health implications of newly designed raw and processed foods will be evaluated.

- **Identifying the health effects of harmful and beneficial non-nutrient food components**
  Modern nutrition must extend beyond the characterization of essential nutrients. Research will focus on raw commodities and processed foods. Researchers will identify naturally occurring food components, protectants, toxicants, and non-nutritive factors that affect nutrient bioavailability, nutrient utilization and health maintenance.

- **Providing models for developing and evaluating policies that affect the nutritional quality of the food supply**
  Public policies affect food supply, food demand, and food quality. ISU's Center for Agriculture and Rural Development (CARD) is the largest university-based economics policy research institute in the United States. CARD's food policy group will work with the Center for Designing Foods to Improve Nutrition to conduct research on food and nutrition policy.

Funding history

State
The Iowa General Assembly appropriated $4.2 million for construction of the Center.
The University designated a construction site worth $1.6 million.
Current projects that fulfill the mission of the Center have extramural support totaling $6.0 million.

Federal
In FY89 the USDA awarded $281,300 for facilities planning for the new center.
In FY90 a federal appropriation of $2.3 million was awarded for construction.
The need now is for $3.5 million for equipment and $1.5 million for research program operations.

◆ Budget Request

Operations

	USDA	ISU	State of Iowa	Total
Fiscal Year 1991				
Staff	$ 80,373	$150,000	$ 0	$ 230,373
Office Operation	19,627	0	0	19,627
Research Program	1,400,000	0	150,000	1,550,000
Total	1,500,000	150,000	150,000	1,800,000
Fiscal Year 1992				
Staff	119,084	250,000	0	369,084
Office Operation	23,625	0	0	23,625
Research Program	2,357,291	0	250,000	2,607,291
Total	2,500,000	250,000	250,000	3,000,000
Fiscal Year 1993				
Staff	250,762	300,000	0	550,762
Office Operation	39,000	0	0	39,000
Research Program	4,210,238	0	500,000	4,710,238
Total	4,500,000	300,000	500,000	5,300,000
Fiscal Year 1994				
Staff	409,060	400,000	0	809,060
Office Operation	47,000	0	0	47,000
Research Program	5,543,940	0	600,000	6,143,940
Total	6,000,000	400,000	600,000	7,000,000
Fiscal Year 1995				
Staff	569,544	500,000	0	1,069,544
Office Operation	53,000	0	0	53,000
Research Program	5,877,456	0	600,000	6,477,456
Total	$6,500,000	$500,000	$600,000	$7,600,000

Equipment

An allocation of $3.5 million for equipment is needed for the new facility. Following is a summary of equipment needs.

Offices and Administrative Services

Offices of the director, principal investigators and clerical staff housed in the new facility will be equipped according to standard university procedures. Equipment includes desks and chairs, computer work stations, microcomputers, file cabinets, a copy machine, reception area furniture, bookcases, and credenzas.

Animal Facilities

Animal models are basic to many studies of human nutrition. The animal facilities in the new Center will meet all standards of the Federal Animal Welfare Act, the Public Health Service Guide for Care and Use of Laboratory Animals, and the American Association for the Accreditation of Laboratory Animal Care. (For research involving large animals, Iowa State's existing large-animal facilities will be used.)

Equipment includes: pass-through cage washer, pass-through bottle washer, autoclave for sterilizing cages and bottles, diet mixers and pelleters, animal caging, metabolism cages and racks, laminar flow safety racks, and furnishings.

Community Nutrition Unit

The Community Nutrition Unit requires computer and telecommunications equipment for survey research. Equipment needs in this unit are office furniture, microcomputers,and telephones.

Human Metabolism Unit

Food preparation equipment and dining areas for feeding experimental diets to 25-30 subjects are needed in the human nutrition unit. In addition, the units require sample collection equipment and laboratory equipment for processing human blood and waste samples. Some research subjects will exercise on either a cycle ergometer or a computerized treadmill that includes an electrocardiograph, and energy expenditure will be assessed with a metabolic cart.

Food Science and Sensory Evaluation Units

Sensory evaluation of foods by human subjects will require evaluation booths, food preparation equipment, and instrumentation for objective measurements of food properties. Ingredients must be stored and foods must be prepared under strictly controlled conditions requiring specialized ovens, stoves, refrigerators and freezers. Evaluation booths will be equipped with computer monitors linked to a single computer. Instruments for measuring chemical and physical properties of food will be required. Among these are the Rheometer, the Instron Universal Testing Machine, and the Fat-o-Meter.

Analytic Laboratories

The analytic laboratories will be equipped to assay metabolites and hormones of carbohydrate, lipid, protein, mineral and vitamin metabolism in both human subjects and animal models. The laboratories will be equipped to allow the safe use of radioactive tracers and strong solvents and acids. They also will be equipped for the use of stable isotopes, mass spectrometry and tissue culture.

Some of the equipment is standard for most laboratories: explosion-proof refrigerators and freezers, analytical balances and other balances, pH meters, low-speed centrifuges, high-speed centrifuges, and microcomputers for each laboratory.

Other items serve the special needs of the center. The two ultracentrifuges separate cellular components of nutritionally important tissues. The four spectrophotometers are basic instruments for optical measurements of biochemical reactions. A specialized gas chromatograph -mass spectrometer is a new tool for isolating and analyzing lipid and fat soluble vitamins from samples that are thermally unstable. The inductively coupled plasma mass spectrometer is the best currently available instrument for detecting trace minerals and small amounts of other elements in foods and biological materials. Several types of instruments for detecting radioactivity will be used to analyze tracers used in metabolic studies.

The immediate future

Site preparation has begun, and construction of the new facility is scheduled to begin in September 1990. Faculty members from several colleges collaborated to propose the projects selected as the Center's first research initiatives. Collaborators have made temporary arrangements to compensate for the lack of a centralized facility because it is the University's intention to move into a completed facility with a strong program, highly competitive for extramural funding.

The state and federal funding base outlined in this document will be invested in the rapid development of this superior research program.

UTILIZATION CENTER FOR AGRICULTURAL PRODUCTS

Increased global competition, combined with the fact that the United States typically produces surpluses of grains and animal products, creates major challenges for American agriculture. And advances in biotechnology will further increase our ability to produce. This is likely to enlarge the discrepancy between production and use of agricultural products and reduce market prices to farmers and processors.

One approach to meeting these challenges is to find new ways to utilize farm production in food and nonfood products.

The United States has focused on the export of raw agricultural products and failed to share in the rapidly growing world market for high-value processed products. Adding value to raw products creates economic activity and jobs. It has the potential to help diversify the agricultural sector, reduce foreign trade deficits, and speed up rural development. And it could produce replacements for imported petroleum products, while creating new markets for U.S. farm commodities.

UCAP's Role

The Utilization Center for Agricultural Products (UCAP) was established in 1988 to help increase new and high value uses of farm products, diversify agriculture, stabilize the sector's economy, and improve the U.S. position in domestic and international markets.

The center is designed to respond to this urgent need to improve the position of American agriculture by focusing on: 1) developing new and improved products and processes; 2) developing markets and innovative marketing strategies; and 3) transferring technologies to U.S. industries.

The U.S. Congress has recognized the important contribution of these programs by allocating funds for the first and second phases of facilities construction. Also indicative of Congressional support is language found in the FY90 Senate Agriculture Appropriations report, which recommends at least $50 million of the ARS budget be allocated toward new nonfood uses of agricultural commodities—an element of UCAP.

To maintain momentum and avoid losing program opportunities in emerging utilization technologies, additional funding is needed now to complete construction of UCAP facilities and help support start-up operations. Each delay is a step backward as other nations claim a larger share of global markets.

Goals and Early Results

Results of some early programs are highlighted under the following discussion of goals.

Products and Processes

The center will broaden the knowledge base needed to expand the use of raw agricultural materials as food and industrial products. New value-added products will help expand foreign and domestic markets for American agriculture. And innovative processing techniques will improve the competitive position of U.S. processing industries.

•Studies on corn starch in plastic to improve its ability to degrade resulted in three recent patent filings. Ways have been discovered that make starch particles smaller and more compatible with polyethelene—so more starch can be put into plastic without sacrificing strength. Also, polyethylene has been modified to make it more compatible with starch. These processes should strengthen starch-modified plastics and speed up their degradation in the environment.

•Early work on bovine plasma, a by-product of the meat packing industry, resulted in greatly expanded exports of purified plasma for use in food products. More recently, researchers are working to use the plasma as a substitute for sodium caseinate, now imported for use in "veg-dairy" products (creamers, whipped toppings, etc.). The center is helping a processing company located in the ISU Research Park assess the potential of this substitute.

Marketing

Potential new and expanding markets for U.S. agricultural products must be evaluated. The center will conduct economic, marketing, and policy studies to identify new and emerging markets for U.S. production. These studies include cost analysis, market impact, and market identification. Tariffs and other policies that affect foreign trade also will be evaluated.

•In 1988, the United States and Japan signed an agreement opening the door to more Japanese beef imports. An economic analysis of the Japanese position on beef imports by researchers in the meats program of UCAP provided valuable data to policy makers in negotiating the agreement. The changes in market trends, tastes, regulations, and

promotional activities that will occur in Japan over the next decade will increase the need for information to help U.S. producers and processors. Center researchers also are continuing their studies to help maintain and expand markets for meat in other Pacific Rim countries.

•The potential to export identity-preserved soybeans to Japan for use as food (tofu, soymilk, miso, etc.) has been assessed. These results have helped an Iowa seed company tap this market. Because of ISU efforts to understand soybean traits that relate to quality of food uses, a Japanese company has decided to locate in Iowa to export a semiprocessed product from specialty beans for the Japanese soyfood industry.

Technology Transfer

Successful transfer of technology and market information to processors, traders, and producers will be emphasized at the center. Pilot plant studies and demonstrations are planned to help convert laboratory studies into practical products and processes. Patent and licensing policies will be designed to encourage cooperation between the center and industry. A technology-transfer team from the center will help businesses apply new technology.

•UCAP's meats program offers nine seminars per year for the meat industry. These courses are attended by about 450 people each year, representing over 300 companies. Courses on exporting meat to the Japanese market are conducted in both Japanese and English, and a week-long summer short course in meats processing technology is offered twice—once in English and once in Spanish.

•A special feature of a recent meats seminar was the presence of Japanese businessmen representing supermarkets, processing companies, trading companies, family and fast-food restaurants in Japan. These representatives discussed importing U.S. products and were available to talk one-on-one with U.S. businessmen.

•Center scientists helped the Iowa Department of Natural Resources plan a demonstration project to evaluate the performance of starch-containing degradable plastic bags for compostable wastes, such as lawn, garden, and shrub litter. Degradation of the modified plastics during composting will be closely monitored to determine if this emerging technology delivers expected results.

Background

The Utilization Center for Agricultural Products integrates the programs of the Center for Crops Utilization Research (CCUR) and the Meat Export Research Center (MERC), which includes the linear accelerator facility. The Iowa Legislature appropriated funds in 1984 to establish CCUR and MERC, demonstrating Iowa's commitment to excellence in agricultural technology. Both programs are interdisciplinary and staffed by faculty from academic departments at Iowa State University.

The linear accelerator facility is being built adjacent to the Meat Laboratory with funding from the Department of Energy and the State of Iowa. This state-of-the-art facility will be used for research programs and demonstrations. Potential benefits are to eliminate pathogenic bacteria and to extend the shelf life for meats, a particular problem in shipping fresh beef to Japan. The facility is scheduled to be operating in late 1990.

A plan for UCAP was presented to Congress in 1986. Findings of an outside review panel, including representatives of both the private and public sectors, led to initial funding by Congress and establishment of the center.

Facilities Needed

The principal site for facilities construction and renovation is the Dairy Industry Building at Iowa State University. CCUR, located in the Dairy Industry Building, has inadequate and obsolete laboratory and pilot plant space for research and technology-transfer programs.

Most of MERC's programs will be located in the existing ISU Meat Laboratory, which has physical facilities considered to be among the most modern in the world, and at the linear accelerator facility now under construction.

The new and renovated facilities in the Dairy Industry Building will mainly house pilot plants and laboratories for the crops research program although some laboratories (such as those for sensory evaluation) will be shared with the meats program. Acquisition of crop-processing plants is the highest priority, followed by supporting research (chemistry-type) laboratories and offices for center administration.

An appropriation of $6.8 million in 1991 for the completion of research laboratories is urgently needed. Although acquisition of crop-processing pilot plants, the greatest priority, is well under way, pilot plants are incomplete without research support from the laboratories and facilities for technology transfer. All components—research, applied experimentation, and demonstrations—are necessary for success.

Funding

In FY88, the 100th Congress appropriated $6.375 million to finance the first phase of establishing a national center at ISU, and a plan was submitted to the U.S. Department of Agriculture, Cooperative Research Service, on June 16, 1988. The USDA approved the plan September 2, 1988. The Congress appropriated a second grant of $1.7 million in FY89 and $950,000 for operations. For FY90, a final request of $10 million was sought to conclude the construction of the facility, of which Congress awarded $3.24 million. For FY91, $6.8 million is required to fund the balance. UCAP also seeks $1.2 million for start-up operations to initiate programs in the new facilities.

Total cost for CCUR facilities is estimated to be $16.5 million, and cost for research equipment and pilot plant processing equipment is estimated to be $5.0 million.

The federal grants are targeted for renovation and construction of crops facilities and for purchase of equipment for CCUR and MERC. The Iowa Legislature made a special appropriation of $500,000 toward this program in 1988. The State of Iowa is currently providing $1 million for research programs. Additional state appropriations are being sought to provide a targeted base level of funding of $1 million each for MERC and CCUR. Outside grants and contracts provide approximately $1.4 million in about 75 projects sponsored by commodity groups, industry, federal competitive grant programs, and state agencies.

Development of the linear accelerator facility traces back to 1983 when Congress created a program intended to demonstrate and transfer the technology of irradiating agricultural commodities and products.

In July 1986 Iowa State University entered into a cooperative agreement with the U.S. Department of Energy as a regional sponsor for an irradiation facility for meat and meat products. Funding for the project was expected to be $4 million from the U.S. DOE, and $1 million was appropriated from the State of Iowa in 1988. In March 1988, however, the irradiation facility plans were changed to make the irradiation source machine generated rather than isotope generated. This change increased the project cost by $2 million. In 1989, DOE increased its funding by another $0.2 million and another $0.8 million in 1990.

Currently, funding for the project is at $5 million from the U.S. DOE, $1 million from the State of Iowa, and $1 million from Iowa State University. Another $2 million is being sought from the State of Iowa to provide laboratories and offices for the research and technology transfer program. Current and projected support for UCAP is shown in the following table.

	FY87	FY88	FY89	FY90	FY91	FY92
Facilities*						
USDA	$0.05	6.4	1.7	3.2	6.8	0.0
DOE	0.0	4.0	0.2	0.8	0.0	0.0
State of Iowa	6.3	4.2	0.0	0.2	2.0	3.0
Operations						
USDA (MERC,CCUR)	$0.0	0.0	0.95	0.0	1.2	0.0
State of Iowa	0.5	1.1	0.8	1.0	1.5	2.0
Grants/Contracts	0.7	0.6	0.7	1.4	1.4	1.7

* Includes other supporting facilities such as the linear accelerator.

New Program Start-up

Funds requested for operations will cover start up costs to initiate several new programs in both the meat and crops areas. Also, the crops program will need pilot plant operations personnel and a technical transfer specialist to work with businesses interested in adopting newly developed technologies.

Programs being planned for crops utilization include:

- Find ways to increase recovery of feed additives from soybean oil refinery by products. A company has requested assistance with this problem.
- Develop an understanding of the mechanisms and control of starch biosynthesis so that the types of cornstarch can be altered and thus open new markets.
- Investigate enzymatic methods to reduce the level of cholesterol in foods.
- Study ways to reduce the viscosity of soybean oil to improve its spray characteristics for industrial uses.

•Conduct economic/technology assessments of industrial uses for soy and corn proteins, such as thermoplastics, adhesives, paper coatings, films, and fibers.

On the drawing board for the meats program are several new initiatives, including:

•Develop new processed meat products that have improved nutritional properties and at the same time have acceptable texture and flavor. These products would be substantially lower in fat and salt and higher in soluble fiber.
•Develop surimi-type material from mechanically deboned pork to increase the value of this deboned material.
•Investigate new ways to utilize meat by-products, particularly hair and lungs.
•Develop processes for products that will maintain high-quality characteristics after being pasteurized with ionizing radiation.

Master Plan

The facilities master plan was completed and approved by the Iowa Board of Regents on September 27, 1988. It involves three phases. The three grants already appropriated in FYs 1988, 1989, and 1990 will take care of commitments for phases I and II, and the $6.8 million appropriation requested for FY91 will complete the final phase—phase III.

Phase I: Phase I work consists of two separate contracts. The first stage, on which construction began in April 1989 and will be completed by March 1990, involves renovating part of the Dairy Industry Building to add about 14,000 square feet of modern chemistry laboratories, offices, and mechanical systems.

The second stage (35,000 square feet) in phase I, on which construction began October 1989, is composed of a two-story addition that will house pilot plants and technology-transfer facilities (a theater and some offices) on the first floor. The second floor will be merely roughed in for later sensory laboratories and a test kitchen.

Phase II: Phase II calls for completing the second-floor test kitchen and sensory areas (3,000 square feet) and renovating 4,200 square feet of laboratory and office space. A central lobby area (1,800 square feet) overlooking a historical courtyard may also be constructed.

Phase III: Phase III calls for building a new two-story wing (32,000 square feet) that will house a technology-transfer pilot plant and supporting research and technology transfer laboratories and for remodeling additional office and laboratory space (14,000 square feet) in the Dairy Industry Building.

Research Program

To expand the crops program, $272,000 was allocated from the 1988 special appropriation from the Iowa Legislature. This, together with operations funding from the Iowa Agriculture and Home Economics Experiment Station and outside funding sources, has made it possible to accelerate studies aimed at meeting the goals of the center.

Outside grants and contracts have grown from about $0.7 million for 20 projects during FY89 to over $1.4 million for 75 projects for the current fiscal year (exclusive of USDA program support). Major grants were received for work on degradable plastics, organic acid fermentation, enzyme modification, genetic engineering of corn, shelf-life of fresh beef, and high-quality beef production.

Payoff

Some exciting prospects are possible from research already in progress and from projected research areas for the next five years. For example:

• New products such as Chinese dried ham, Tonkatsu, a Japanese style pork sandwich designed to provide pork access to the fast food market; BAM, a ham like product made from beef chuck; and meat based snack chips and dips all provide new access to and development of foreign markets for meat products.

• Oats are being used in a process for breaking fats down into more valuable components. This uses an enzyme rather than a chemical reactor. A patent application has been filed on the process.

• Rapid methods to detect microbial contamination in meats are being developed. Considerable success has already been achieved on quick detection of pork contaminated with toxigenic fecal bacteria. Methods also are being developed for decontaminating and preserving meat products.

• Alternative crops can yield proteins, oils, starches, and other components with valuable properties for food and industrial uses. An experimental crush of 250,000 pounds of crambe seed provided valuable information on a commercial level. Crambe oil may be useful in plasticizers and lubricant additives. The oil is being evaluated by an oleochemicals company.

• Products are under development at MERC to facilitate a joint venture between a U.S. firm and a Japanese firm. These products will be test marketed as a high-quality branded product in the Japanese market.

• A special line of soybeans developed at ISU is low in the fatty acids that cause rancidity. Oil from an experiment crush of these specialty beans will be refined, and center scientists will monitor performance of this new oil in mayonnaise produced by a local salad-dressing manufacturer.

• Biotechnology promises new crop varieties, making it possible to modify the composition of oil in soybeans and the architecture of starch in corn. Studies to change the functionality of vegetable oils for greater stability can reduce imports of foreign oils and simplify the chemical processes involved.

• MERC economists are assessing the costs of achieving selected maximum levels of food-borne pathogens in the U.S. food supply. Cost-benefit ratios are being determined for controlling contaminants and residues in meat.

• Fermentation of corn starch produces several organic acids that are now produced from petroleum. Propionic acid is a mold inhibitor in food and grain and also is used in plastics. Lactic acid can be used for chemical feedstocks and biodegradable plastics. Noncorrosive acetic acid salts can be used to replace the corrosive salt used to treat roads. Studies on these organic acids produced by fermenting corn starch are in progress.

• The quality of U.S. grains simply does not measure up to some of our competition. One of the results of grain-quality research has been the establishment of the economic value of nutrient composition to the end users of grain. This information, coupled with more descriptive grain-quality standards, is expected to encourage production geared toward specific needs, with resulting higher revenues for producers and processors.

• Center research on the use of enzymes to enhance starch separation during corn wet milling was recognized with a Corn Refiners Association Award. Also, researchers are finding considerable variation in starches, and the differences open up exciting possibilities in utilization. A patent application is being prepared on a new corn variety having unique starch functionality.

• An ISU environmental toxicologist is studying how plastics degrade in the soil and how degradation products move through the soil. This research will help determine if degradable plastics pose a pollution threat.

The Opportunity Is Now

For the first time, the United States is losing its competitive edge. Without new ways to utilize American agricultural production capacity and to increase our competitive position worldwide, our surpluses will only get larger and our presence in world markets will only decline. We need to accelerate efforts to pry open new markets by making a strategic investment now in our agricultural economy. The potential benefits from this increased investment are widespread—improved income for farmers, increased employment in the agricultural sector, and new products for consumers.

We can't afford to back away from technology. Lost program opportunities will result if facilities are not in place soon. This means that the requested $6.8 million for facilities and the requested $1.2 million for program must be appropriated in FY91 so plans can continue in a timely sequence.

Testimony Regarding the

THE MIDWEST AGRICULTURAL BIOTECHNOLOGY INFORMATION CENTER at Iowa State University

Presented to the

House Committee on Appropriations
Subcommittee on Rural Development, Agriculture, and
Related Agencies

Summary of Request

The following pages summarize the proposed pilot project refereed to as the Midwest Agricultural Biotechnology Information Project. The Center is a cooperative effort of the National Agricultural Library and a consortia of land grant universities in the Midwest. Institutions of higher education, the USDA, and agribusiness companies are investing billions of dollars annually to create an infrastructure to support biotechnology research and technology transfer of research to the private sector.

The Center would address the urgent national need to make available the information resources necessary to support the scholars doing agricultural biotechnology research. Given the high cost of obtaining this information no single library can afford to provide locally all the information researchers will require. The solution is to have each library focus on certain aspects of agricultural biotechnology and making that information available to the rest.

The information project's objectives would include defining which aspects of biotechnology each library would be responsible for, implement a networking system allowing information to flow to the other locations, and to investigate consortial approaches to copyright and licensing agreements.

The funding request for this initiative is $3.5 million for FY91 which would be needed in order to provide the necessary computing capabilities at the National Agricultural Library and at Iowa State University, and allow for acquisition of databases and publications.

MIDWEST AGRICULTURAL BIOTECHNOLOGY INFORMATION CENTER:

A PILOT PROJECT

AGRICULTURAL BIOTECHNOLOGY: A NEW INFORMATION CHALLENGE

Agricultural biotechnology is a critical new area of research in the United States, one which has major economic import for the future of this country. Institutions of higher education, the USDA, and agribusiness companies are investing billions of dollars annually to create an infrastructure to support biotechnology research and technology transfer of research findings to the private sector. Unfortunately, little attention has yet been given to providing the information resources necessary to support the scholars doing agricultural biotechnology research. This is a major new research area for land grant institutions and the National Agricultural Library (NAL); and specific funding for information resources has been very limited. For example, in FY90, the National Agricultural Library received only $48,800 to support a new NAL Biotechnology Information Center; by comparison, the National Library of Medicine received $6.7 million in federal funds for support of medical biotechnology information in FY90.

The information and publications needed by libraries to support this research are very expensive, and they are published increasingly in electronic format. For example, one new journal in this area costs $6,000 annually for four issues. Much of the electronic data is costly to search and retrieve; an online literature search on commercial data bases might cost $400 or more. Creation of automated indexes and full text data bases requires enhancements to existing automated information systems in libraries. Providing public access to gene bank data bases (which are being created by USDA and academic researchers) is an entirely new challenge for information specialists. Since much of the literature needed is interdisciplinary, cutting across traditional subject areas, researchers require access to hundreds of data bases and thousands of journals and the assistance of information specialists prepared to acquire, organize, and access this information.

Given the high cost of this information and the loss of purchasing power that traditional library budgets have suffered in the last decade due to inflation and the devaluation of the dollar, no single library can afford to provide locally all the information these researchers will require. In order to meet the challenge of providing agricultural biotechnology information to support the new academic/agribusiness research infrastructure, libraries need to take a new approach to information access. The purpose of this pilot project is to implement an information center based on a new model.

THE INFORMATION CENTER MISSION

Funding is requested to establish a Midwest Agricultural Biotechnology Information Center which would create a network approach to library collections and electronic data bases in the area of agricultural biotechnology. The Center will be a cooperative effort of the National Agricultural Library and a consortium of Midwest land grant libraries whose institutions participate in the Midwestern Universities Alliance. This consortial approach could serve as a model for future biotechnology centers in other geographic areas as this research and literature expands.

USDA is heavily involved in biotechnology and has significantly improved coordination of research and policy activities in this area - both within USDA and with other state and federal agencies. Some funding for information gathering and distribution of NAL's biotechnology information center has been provided - $48,800 in FY90. However, without much greater attention to the information aspects of agricultural biotechnology, agricultural researchers will be at a major disadvantage relative to other researchers nationally and will be hindered in their efforts to compete internationally in biotechnology research.

The National Agricultural Library relies on the nation's land grant libraries to provide grass roots support for agricultural information. In recent years this has resulted in a series of cooperative efforts with the land grant libraries, including cataloging and indexing programs, microfilming of state agricultural publications, document delivery for USDA employees, and projects such as the National Agricultural Text Digitizing Project with 45 land grant libraries which is being managed by the Iowa State University Library. Such cooperation makes the collective holdings of all land grant libraries available to the nation and makes staff expertise and local collections distributed throughout the land grant system available to NAL. These projects have been successfully undertaken by use of interinstitutional cooperative agreements.

The National Agricultural Library has already undertaken four activities which will contribute to the founding of the Midwest Agricultural Biotechnology Information Center:

- NAL, the Library of Congress, and the National Library of Medicine have signed an agreement which defines collection development responsibilities for biotechnology in order to avoid duplication of effort among the national libraries.
- NAL has initiated a small internal NAL Biotechnology Information Center which includes coverage for: genetic engineering - recombinant DNA; tissue culture -plant and animal; single cell protein; immobilized enzymes; biomass for energy or chemicals; embryo transplants - plant and animal; fermentation process; legislation and regulation; risk assessment of the release of genetically engineered organisms; growth hormones; transgenic animals; detoxification using microbes.
- NAL and 45 land grant libraries have gained experience with electronic full text and graphics applications and remote electronic delivery of text through the National Agricultural Text Digitizing Project begun in 1986.
- NAL and Iowa State University have entered into a cooperative agreement by which the ISU Library is designing, with input from other land grant libraries, a distributed network approach to biotechnology information.

These initiatives provide NAL and key land grant libraries with experience important to the successful implementation of a new model for cooperative information delivery in the specialized area of agricultural biotechnology.

PROGRAM OBJECTIVES

The three major objectives of the Midwest Agricultural Biotechnology Information Center program are: (1) to use the subject analysis technique developed by the Research Libraries Group (RLG) called The Conspectus, whereby NAL and participating Midwest land grant libraries would define what aspects of biotechnology each would be responsible for collecting, in what languages and formats, and at what degree of comprehensiveness; (2) to implement the network design developed by Iowa State University for an online linked computer-based information network and mount appropriate biotechnology data bases for shared access among NAL and the participating Midwest land grant libraries; and (3) to investigate consortial approaches to copyright and licensing agreements between publishers, for-profit information providers, and the consortium members.

The Conspectus.--The Conspectus is an analytical methodology used to facilitate the coordination of collections among major research libraries in the United States. Developed by the Research Libraries Group, a consortium of major research libraries, it is a way of analyzing collections and subject specialization in order to divide responsibility among institutions for comprehensive collections in specifically defined subject areas. This methodology would be applied to the area of agricultural biotechnology for those Midwest land grant libraries participating in this information center, based upon the specific research specializations of researchers at each campus. Once the NAL and the participating libraries agreed upon division of collection responsibility, subject specialists at each library would be responsible for ongoing identification and selection of publications and electronic data to be added to their collections or to be made available electronically through the Center. In this way, the research collections would reside where the research was being conducted and also made available nationally.

Network Design.--Because publishing and research will always utilize a variety of formats (e.g. paper, microforms, electronic storage and transmission), the network design must also include access to and delivery of multiple formats. The key to access of the publication or data, regardless of format, is to include the description of the work into existing library bibliographic data bases; the three which are primary to this proposal are AGRICOLA, OCLC, and RLIN. Thus, any material added to the Center by any of the participants will be entered into these national library network data bases. Researchers can search these data bases either in their land grant library or from their own terminals or workstations to identify which library owns a title.

The network design will encompass a variety of electronic delivery techniques: online access to centrally maintained data bases; telefacsimile transmission of full text; and electronic transmission of ASCII text and bit-mapped images to scholarly workstations over the Internet or other appropriate telecommunications networks. Thus, if a work is in paper format, it could be transmitted to the scholar using telefacsimile technology. If it is already in electronic format, either as ASCII text or as bit-mapped images, it can be transmitted over a telecommunications network directly to the scholar's workstation. At present, microforms would still have to be copied and mailed, though new scanning technology is emerging to scan and digitize microforms for electronic transmission.

The network design includes two central computing nodes for storage of electronic data bases, one at the National Agricultural Library and one at Iowa State University. Those nodes would be interconnected to the other participating land grant libraries for online access to those data bases. All participating libraries would be equipped with telefacsimile equipment and workstations.

The Center is based upon a design of distributed responsibility for collecting and making available publications and electronic data. Each library would have a subject specialist in agricultural biotechnology; and each subject specialist would identify materials for purchase or addition to the centralized electronic data bases. This would ensure that at least one copy of important titles or data was being collected somewhere in the United States and that scholars nationally would have access to those titles or data. Members of the Center would be responsible for making those titles or data available nationally to scholars.

Copyright and Licensing Agreements.--Wherever possible, agricultural biotechnology research reports and data produced with public funds and identified as part of the Center collection would be made available to the scholarly community through this network under agreements with the individual scholar, government agency, or institution of higher education. Information from the for-profit sector would be made available under negotiated licensing agreements. Because access to information electronically is a very new phenomenon, the arrangements for making proprietory information available are still negotiated on a publisher by publisher basis. Traditionally published journal articles or books would be made available under the existing copyright guidelines.

THE NATIONAL AGRICULTURAL LIBRARY

The National Agricultural Library has a long history of working with land grant libraries under a series of cooperative agreements. This model of distributed responsibility for collecting has been tried in narrow specialized areas such as arid land, agricultural law, and rural information. Thus, NAL's staff has experience with cooperative collection building and shared reference responsibilities. The National Agricultural Library supports this approach to the area of agricultural biotechnology and has provided Iowa State University, the institution currently managing the National Agricultural Text Digitizing Project under an NAL cooperative agreement, a small planning grant to work with other land grant libraries on refining the network design. That work will be completed in FY90.

THE PAYOFF

The implementation of the Midwest Agricultural Biotechnology Information Center would ensure that:

- Agricultural biotechnology research materials will be acquired by at least one major land grant library and/or the National Agricultural Library and made available to researchers nationally. Given the quantities of information and data required (and its high cost) to support this area of research, no one library can afford to collect comprehensively, including NAL.

- Researchers on each of the Midwest land grant campuses will have the materials for their areas of specialized research available on their own campus or electronically from the electronic data bases maintained by NAL or Iowa State University. This would support creation of centers of excellence in subspecialties of agricultural biotechnology. ISU already maintains some U.S. Department of Agriculture data bases (a soil interpretations data base and a national resources inventory); the biotechnology data base(s) would build on an existing relationship and utilize existing expertise.

- NAL and the individual cooperating libraries would be developing information specialists with subject expertise in agricultural biotechnology, available to serve researchers in agricultural biotechnology for individual campuses, the USDA, and agribusiness.

- The electronic networking infrastructure between the NAL and the participating land grant libraries would be put in place and serve as a model for other campuses as subject coverage in agricultural biotechnology expands.

- Agricultural researchers in the U.S. would be more competitive with those efforts being made in other countries.

BUDGET REQUEST AND JUSTIFICATION

In order to initate the program for the Midwest Agricultural Biotechnology Information Center Pilot Project, computer facilities at the land grant libraries and the NAL need to be expanded, materials purchased, and staff engaged. The FY91 request for $3.5 million would include the major upgrade of the NAL and land grant libraries' computing facilities, licensing agreements and publications, and operational costs to NAL and the cooperating libraries for the first year of a three-year pilot project. In the second and third years, the computer network, including storage, retrieval, and telecommunications hardware configurations at NAL and the participating landgrant libraries, would be improved further. Continuing operating funds support subject specialists and costs associated with purchasing, cataloging, organizing, and storing publications and electronic data bases. Operating costs should become part of NAL's annual operating budget after year 3 and successful evaluation of the pilot project.

Financial Summary, FY91 - FY93

	FY91	FY92	FY93
Capital Costs:			
NAL computer hardware/software	$1,000,000	400,000	300,000
ISU computer hardware/software	$ 600,000	150,000	100,000
Landgrant workstations and FAX	$ 200,000	100,000	50,000
Operating Costs:			
NAL (4 staff/equipment/travel)	$ 350,000	375,000	400,000
Cooperating libraries (7 information specialists)	$ 350,000	375,000	400,000
Databases & publications	$1,000,000	1,100,000	1,200,000
Project Total	$3,500,000	2,500,000	2,450,000

March 28, 1990

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

DISTINGUISHED UNIVERSITY RESEARCH PROFESSOR
PROFESSOR OF POLYMER SCIENCE

March 29, 1990

The Honorable Jamie L. Whitten, Chairman
Subcommittee On Rural Development,
Agriculture and Related Agencies
2362 Rayburn
House Office Building
Washington, DC 20525-6016

Dear Chairman Whitten:

Enclosed is testimony on behalf of the Polymer Science Research Facility at the University of Southern Mississippi. I would greatly appreciate your inclusion of this testimony as part of your official hearing record. On behalf of the Polymer Faculty of the University of Southern Mississippi, we deeply appreciate your efforts on this much need facility.

Very truly yours,

Shelby F. Thames

Enclosures

SFT/bbm

Southern Station • Box 10076 • Hattiesburg, Mississippi • 39406-0076 • (601) 266-4080

TESTIMONY OF

DR. SHELBY F. THAMES
DISTINGUISHED UNIVERSITY RESEARCH PROFESSOR

DEPARTMENT OF POLYMER SCIENCE
UNIVERSITY OF SOUTHERN MISSISSIPPI

PRESENTED TO

THE SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES
OF THE
COMMITTEE ON APPROPRIATIONS
UNITED STATES HOUSE OF REPRESENTATIVES

MARCH 30, 1990

Chairman Whitten and members of the committee, I am Shelby F. Thames, Professor of Polymer Science at the University of Southern Mississippi in Hattiesburg, MS. Mr. Chairman I would like to thank you and other members of the subcommittee for your support and assistance over the past several years. I would like to take this opportunity to report to you on the progress which has been and is being made with regard to the construction of a USDA sponsored Polymer Science Research Facility. This facility is being constructed on the campus of the University of Southern Mississippi and when completed will represent the state-of-the art in polymer science research capability. This research facility will make it possible to conduct a broad range of agricultural related research projects. The Polymer Science faculty is committed to excellence in research and desires to play a significant role in the future research efforts on agricultural materials; specifically as they relate to the use of agricultural materials in the polymer industry. We are uniquely qualified for this challenge in that the University established the Department of Polymer Science as an autonomous academic unit in 1970. The Department was one of, if not the first to offer Bachelors, Masters and Doctor of Philosophy degrees in Polymer Science. We have grown to twelve full time faculty, one hundred and fifty undergraduate majors and approximately 50 students seeking advanced degrees. Our research component is very strong as it utilizes degree seekers at the undergraduate and graduate levels supplemented by several postdoctoral fellows and, of course, our own nationally recognized research faculty.

At the outset of this project the University established a committee whose purpose was to study, evaluate and to make recommendations regarding the requirements of a modern polymer science research facility. The committee was broad based and included members from the scientific, engineering and architectural disciplines. The members of this committee and their area of responsibility are listed below:

Mr. David Anderson, USM Construction Engineer
Mr. Larry Daughtry, Electrical Engineer
Dr. Roger Hester, Professor of Polymer Science
Dr. David Huffman, Dean of the College of Science and Technology
Mr. Turner Jones, Mechanical Engineer
Dr. Kenneth Mauritz, Associate Professor of Polymer Science
Dr. Charles McCormick, Professor of Polymer Science
Dr. Dennis Canfield, Assistant Professor of Polymer Science
Dr. Shelby F. Thames, Distinguished University Research Professor

Members of the committee were assisted by Canizaro and Trigiani/ Architects and Eley Associates/Architects, in consultation with Earl Wall Associates of San Diego, CA. The architects and design engineers were responsible for the design of a functional research facility meeting all necessary codes and regulations. They were approved by the Board of Trustees of Institutions of Higher Learning of the State of Mississippi after the committee heard presentations and made extensive evaluations of numerous architectural firms. The architects have worked closely with all members of the committee and completed the building plans and specifications. The plans and specifications received all necessary approvals including that of our University President, Dr. Aubrey K. Lucas, The Board of Trustees of The Institutions of Higher Learning of Mississippi and the United States Department of Agriculture. Subsequent to the approval of the plans and specifications the building was let for bids according to the laws and regulations of the State of Mississippi. The bidding process resulted in the general contractor, Finlo, Inc. being selected. All approvals necessary for construction to begin were obtained. With funding made possible through USDA, construction began on August 1, 1988. The architects are currently overseeing the construction of the facility and report that construction is on schedule and no projected delays expected. With construction funds in hand, a need arose for additional equipment funds to properly equip the facility and thus complete the project. As always, you were most helpful in seeing that these needs were met and I am delighted to report that as a result of the most recent Congressional appropriation the facility will be completed in all respects. I have been notified by Mr. Royce Pierce, the On-Site Architect, that the contractor will be substantially complete with his work when his contract time of September, 1990 expires. However, there will be additional equipment and furnishings installation required so as to move the anticipated occupancy date to December, 1990.

With the completion of the Polymer Science Research Facility it is wise to look to the future and insure its appropriate utility. I was pleased to have been a speaker at the recent first national conference on "Commercializing Industrial Uses for Agricultural Commodities," held March 14-16, 1990 in Washington, D.C. The focus of this conference was to emphasize the importance and the existing opportunities for commercializing industrial uses for agricultural commodities. It is clear that agricultural commodities can successfully compete with petroleum based derivatives. Moreover, agricultural commodities have immense potential in the polymer and related industry. For instance, on-going cooperative research between scientists from Texas, New Mexico, Arizona, California and Mississippi is moving toward the establishment of a domestic, natural rubber industry. The success of this endeavor is particularly important given that this nation's entire supply of natural rubber, a strategic material, is currently being imported.

This work was given impetus in 1977 by an ad hoc advisory panel established by the National Academy of Sciences. The panel concluded that commercialization of guayule would require:

- The development of a standard rubber product of known properties, and
- The commercial utilization of processing co-products.

To achieve these goals scientists must understand the nature of the rubber, *cis*-polyisoprene, and non-rubber materials produced by the Guayule shrub and apply this understanding to the development of value added products for the industrial marketplace. While the scientists from Texas, New Mexico, Arizona and California are involved with research and development activities in the areas of plant breeding, separation science, land and water management and developing planting and harvesting techniques for Guayule, the University of Southern Mississippi has the responsibility for finding new and economically attractive uses for the co-products resulting when natural rubber is extracted from the Guayule shrub. Guayule is the only temperate zone plant which produces a linear, high molecular weight rubber; the product required for fabrication of high quality elastomers such as surgical gloves and auto and aircraft tires. It thrives in the semi-arid regions of the United States on desert lands which traditionally produce no agricultural crops. Therefore, to utilize such lands for the establishment of a domestic natural rubber industry would be a major accomplishment.

The USM scientists have work diligently to identify the coproducts generated in the processing of Guayule shrub and to utilize these coproducts for development of commercial, value-added products. Accordingly, we have shown that **the low molecular** weight rubber isolated during processing can be employed for the production of **chlorinated rubber**, a product used in durable and corrosion resistant exterior coatings. These coatings are heavily utilized as industrial maintenance coatings, highway marking paints, and corrosion inhibiting coatings. They are products of high quality, as the chlorinated guayule rubber imparts excellent resistance to water, exterior conditions and chemical attack. The chlorinated rubber is sold for more than three times the cost of high molecular weight Guayule rubber and therefore is one, very attractive coproduct to be developed as part of the commercialization of the Guayule rubber industry in America. These results serve as an example of the type research and development activities of polymer scientist. You and your colleagues of the 98th Congress are responsible for these developments; you made it possible by enacting public law 98-224, the Critical Agricultural Materials Act, in 1984. The law stated, in part:

> "Congress recognized that the development of a domestic industry or industries for the production and manufacture from native agricultural crops of products other than rubber which are of strategic and industrial importance but for which the Nation is now dependent upon foreign sources, would benefit the economy, the defense, and the general well-being of the Nation, and that additional research efforts in this area should be undertaken or continued and expanded."

The funding of the construction of The Polymer Science Research Facility is most appropriate as Mississippi is a state with a strong agricultural heritage. Moreover, polymer science at the University of Southern Mississippi had its origin in the use of agricultural materials. In the early 1960's tung tree cultivation was prevalent along the Southern border of the state and leaders of the industry perceived a need to develop new uses for tung oil in an effort to expand its economic importance. It was well known at that time that tung oil was a high quality, naturally occurring vegetable oil with unique drying properties. In fact, it was part of the strategic stockpile during World War II, as Guayule is today.

The University of Southern Mississippi initiated a major research effort to develop commercial uses of tung oil. The results of these studies, the quality of the student educated, as well as the national need for trained polymer scientists was sufficient justification to obtain approval for the development of a separate and autonomous academic unit, the Department of Polymer Science, in 1970. With administrative approval the Department of Polymer Science was formed and the initial seed of Polymer Science had taken root in south Mississippi. Growth has continued over the years and currently agriculturally derived polymer components continues to be a high priority.

Ours is a strong and lasting commitment to the research utilization of agricultural crops and to affirm your wisdom in providing support for this much needed facility. Once again Chairman Whitten, I thank you and the Members of your subcommittee for your past assistance and for enabling the completion of this project.

The National Center For Resource Innovations

1220 19th Street, NW- Suite 400; Washington, D.C., 20036
Telephone: (202) 775-0999, FAX: (202) 659-8339

March 30, 1990

The Honorable Jamie Whitten
Committee on Appropriations
Rural Development, Agriculture and
Related Agencies Subcommittee
2362 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

On behalf of the National Center for Resource Innovations (NCRI) I would like to thank you for the opportunity to submit testimony to the Committee.

The National Center for Resource Innovations is a private, tax-exempt, nonprofit, educational organization. It was established in order to meet congressional directives to provide a structured, organized delivery program for Geographic Information System technology transfer to local governments. The House and Senate Conferees provided $500,000 in FY'90 [Report number 101-361, November 15, 1989] to CSRS/USDA for the establishment of regional NCRI centers in Valdosta, Georgia; Fayetteville, Arkansas; and a site in the Chesapeake Bay Region.

We are asking the Committee to help us build on our success last year by providing $2.5 million to continue work at the Centers, in addition to providing start-up funds for Technology Transfer Centers at the University of North Dakota and Central Washington University.

The history of this Geographic Information System (GIS) Technology Transfer project goes back six years. At that time, American Farmland Trust (AFT) received a foundation grant to conduct an inventory of GIS technology nationwide. American Farmland Trust became interested in GIS technology because of its usefulness in analyzing resource issues as it relates to farm resources.

Geographic Information Systems (GIS) are computer-based technologies including hardware, software and graphics capabilities. These systems can encode, analyze and display information related to natural resources, property boundaries, and socioeconomic variables. Results of GIS analyzes can be described in reports, tables and most importantly, maps in any scale. For example, at the Arkansas site GIS technology will be used to map ponds useful for fire fighting in rural areas. This type of information is critical to local deci-

sion makers involved with rural development, resource management and a wide array of other issues.

AFT discovered during their original research a lack of utilization of GIS technology at the local government level. Reasons included: the cost of computer hardware, a lack of software appropriate to the needs of local government, and a lack of computer knowledge and expertise at the local level. The issue of cost has remedied itself, as computer equipment has plummeted in cost while expanding greatly in capabilities and power. To address the problem of appropriate software, AFT has been involved with the development of GIS software suitable to local units of government. The GIS Technology Transfer project is designed to build technical skill and expertise in the offices of local governments.

It became apparent to American Farmland Trust that transferring GIS technology to local units of government was a bigger job than one small private organization could handle. Thus, AFT approached Congress with the idea to establish five or six regional Technology Transfer Centers around the country, which would provide a conduit for GIS technology and technical expertise to local units of government. This effort serves a mutually beneficial role to both federal and local governments. The amount of environmental analysis and protection required by the federal government for local development has increased tremendously. Yet the tools to effectively perform environmental analyses have not been available to local units of government. The Technology Transfer Centers will help local officials gain access to the technology and data that will improve their efficiency and effectiveness. The Centers will assist local officials to gain access to data already collected by federal agencies, but historically unavailable to GIS software programs within reach of local technical abilities. Ultimately, the Centers will assist in the transfer of appropriate GIS technology which will result in better resource management locally, and better use of data sets already paid for by the taxpayer.

As I previously mentioned, the $500,000 for this years operation has resulted in the start-up of three Technology Transfer Centers. In recognition of the importance of this program, the American Farmland Trust Geographic Information System project was established as a separate nonprofit organization by the title of the National Center for Resource Innovations (NCRI). NCRI, Washington, D.C. site serves as the coordinating office for the Centers, as well as the location for the preliminary work on the Chesapeake Bay. Work at the Washington, D.C. site has included the development of cooperative agreements with USDA-SCS and EPA to begin the work of digitizing National Resource Inventory points in the Chesapeake Bay Region, and the merging of this information with the EPA-REACH file and water quality assessment data bases located in Raleigh, North Carolina. Preliminary plan-

ning has begun in the Susquehanna Watershed to begin to develop a model for understanding agricultural land use and its effect on nonpoint sources of pollution.

The Georgia site has begun work on satellite imagery classification, and the improvement of water and soil data sets. One of their primary goals for the GIS project is to protect wetlands and sensitive ecosystems pursuant to federal laws and at the same time encourage economic development that is essential to the region. They too, have been involved with planning for the long term operation of their Center. The Arkansas site has aggressively developed educational materials to promote GIS technology to local officials and for use by other Centers in the NCRI network.

The long range goal of the GIS project is to establish five or six Regional Technology Transfer Centers. The FY '91 appropriation will include funds for the initiation of a Center at Central Washington University and the University of North Dakota. It will enable the three existing Centers to begin building infrastructure for the important job of providing regional technical assistance.

The FY '91 appropriation will fund the following activities:

GEORGIA

* Continue satellite imagery classification;

* Perform a water resources assessment, including developing cooperative agreements with USGS, USDA-SCS and EPA. Understanding wetlands resources is a critical issue in Southern Georgia;

* Improve soils mapping capabilities;

* Provide training and technical assistance to counties along with data base development;

* As funds permit, begin water management work in the Suwannee River Water Management District.

ARKANSAS

* Develop GIS orientation seminars for local officials, other Technology Transfer Centers and other government officials;

* Develop and conduct detailed short courses concerning technical issues;

* Hire an outreach person to work withthe counties to understand GIS technology;

* Train and deploy two graduate students to provide technical assistance to the counties;

* Begin work on a data library to explore the most usable type of data bases for local governments and the best way to transfer this data;

* Perform cooperative research with local units of government, to map fire ponds and Toxic Release Inventory sites (with emergency response routes and prevention planning).

WASHINGTON D.C.

* Complete interpretations of the NRI-SOILS-5 data for the entire Chesapeake Bay Watershed and merge with the EPA REACH file;

* Provide these data sets to local units of government;

* Begin building a model for the Susquehanna watershed to understand the link between agricultural land use practices and nonpoint source pollution;

* Assist with the development of Lebanon County, Pennsylvania Conservation District GIS capabilities for watershed modeling and alternative agricultural systems for ground and surface water protection;

* Set up protocols for assessing water quality data base;

* Provide technical support to the other Centers;

* Provide information, public education, and program oversight.

WASHINGTON STATE

* Assist local units of government in the acquisition and use of GIS hardware and software;

* Provide training to government agencies, local officials and other NCRI personnel;

* Coordinate GIS use by local and county governments over a broad geographic region, including other NCRI sites;

* Develop special purpose GIS software for the special needs of local government;

* Acquire, develop and analyze 1990 Census data for socioeconomic applications.

NORTH DAKOTA

* Study the environmental impact of changing climate, demographics and land use on the lifetime recharge of diminishing regional aquifers;

* Develop accurate definition of the extent of lands under cultivation through the use of satellite remote sensing;

* Improve soils characterization by use of multi-spectral imaging;

* Improve data base management of remote sensing images and large data sets for use by geographically dispersed users;

* Improve regional access to and awareness of GIS applications.

The Centers recognize the importance of establishing additional sources of funding. As the Centers begin functioning, they will explore other sources of revenue such as user fees, private grants, and local and state funding. The Centers in Arkansas and Georgia have already attracted some local funding support and matching funds have been provided from the Resources Inventory Division/SCS/USDA for the Chesapeake Bay Project. Inquiries and requests for GIS information from the counties have already begun to surface, even though the Centers are still in their infancy.

The federal appropriation requested for FY '91 will enable important computer technology to be transferred to the level of government which is at the cutting edge of making resource and land use decisions. In addition, it will ensure better utilization of the data already collected by federal agencies. This is a one-of-a-kind program oriented to enhancing the decision making capabilities of local units of government.

Thank you for this opportunity to submit testimony.

Sincerely,

Robert J. Gray
President

RECEIVED
MAR 29 1990
APPNS CMTE.

March 26, 1990

Jamie L. Whitten, Chairman
Subcommittee on Appropriations for
Rural Development, Agriculture,
and Related Agencies
Rayburn House Ofc. Bldg., Rm 2362
Washington, D.C. 20515

Dear Chairman Whitten:

Your inclusion of our written statement in the hearing record for FY1991 appropriations would be greatly appreciated. Briefly, our testimony requests an increase of $500,000 a year to the Agricultural Research Service to accelerate the development of biologically based methods of gypsy moth control in urban/suburban and other non-forested areas. In addition to our testimony, also enclosed are copies of related correspondance between Mr. Charles Puffenberger of the Maryland Dept. of Agriculture and Mr. Ralph Bram of ARS.

Thank you for including our statement in the hearing record and your subcommittee's consideration of our request for increased appropriations.

Sincerely,

James F. Pierce
Staff Scientist
Biological Alternatives to
Chemical Pesticides

1525 New Hampshire Ave., N.W. • Washington, D.C. 20036 • (202) 745-4870

Testimony submitted to

The U.S. House of Representatives

Subcommittee on Appropriations for

Rural Development, Agriculture and Related Agencies

The Honorable Jamie L. Whitten, Chairman

Washington, D.C.

March, 27, 1990

by

Environmental Action Foundation
525 New Hampshire Ave., NW
Washington, D.C. 20036

Good morning, Mr. Chairman, my name is James Pierce. I am a sraff scientist with Environmental Action Foundation (EAF). Environmantal Action Foundation, founded in 1970 by the organizers of the first Earth Day, is a national non-profit organization working on energy, solid waste, energy conservation, and toxics issues.

My particular field of endeavor involves the promotion of biological alternatives to chemical pesticides. Environmental Action Foundation assists local civic groups, state and local environmental organizations, and concerned citizens in urban/suburban settings who are concerned about the aerial application of chemical pesticides to control the gypsy moth. We advocate the integrated pest management (IPM) approach to gypsy moth control and believe that all government agencies responsible for gypsy moth control; at the federal, state, or local level, by following this approach could significantly reduce the use of chemical pesticides and the adverse effects they pose to the environment and public health.

We appreciate very much the opportunity to testify on behalf of the appropriation for the Agricultural Research Service (ARS). Specifically, EAF wants to testify on behalf of increased research for control of the gypsy moth. It is our understanding that ARS has responsibility within USDA for conducting research for control of the gypsy moth in non-forest environments whereas the U.S. Forest Service has responsibility for research related to forests.

As the gypsy moth continues to spread into previously uninfested areas, more and more valuable hardwood trees are being threatened in non-forested areas. Gypsy moth populations in urban/suburban areas are causing widespread defoliation and damage, especially in years of drought stress. Such tree damage is causing great concern, and the public is increasingly demanding pest control that is effective and environmentally desirable; current control programs are not meeting the needs of all property owners and managers. Development and effective implementation of improved programs can greatly reduce defoliation and mortality of trees in urban environments and result in maintaining or increasing the value of recrearional and residential property and in avoiding very costly tree removal.

While ARS scientists have made considerable progress in developing improved programs for controlling the gypsy moth in large urban parks and other public lands, the current effort involves permanent funding for only one full time scientist conducting field research. In view of the many promising leads for improving gypsy moth control in non-forested areas, we believe that every reasonable effort should be made to substantially expand field evaluations.

Inquiries to the ARS National Program Staff on how additional resources could be utilized by ARS resulted in the following reply:

"Should opportunities arise in the future that would permit expansion of our national program, there are several high priority research areas that could make substantial contributions to management systems for the gypsy moth in urban/suburban environments. Expanded research thrust areas would include (1) improvement of sampling procedures for egg masses, larvae, and adults, including the development of technology associated with the use of pheremone traps for monitoring high density adult populations; (2) characterization and evaluation of new strains of Bacillus thuringiensis (B.t.) and of the gypsy moth nuclear polyhedrosis virus; (3) development of a ground-based management program, including the use of barrier bands for individual tree treatments in urban areas; (4) development and evaluation of improved procedures for the use of pheremones for population suppression through mating disruption; (5) expanded development and implementation of a compurterized decision-making system for urban areas to include homesites and communities, and the integration of all site-specific programs into a unified urban program; and (6) sponsorship of the economic assessment of the cost-effectiveness of various alternative supportive techniques."

"These thrust areas were identified over the past 3 years through an interagency review of the ARS research program which included a planning workshop held in March 1989 and a variety of other planning meetings. Resources necessary to implement such an expanded agenda would require two additional scientists and associated support as well as resources for the extramural funding for economic research. Based on current budgeting guidelines, this effort would require a permanent increase of $500,000 per year."

EAF fully endorses these expressed needs and respectfully requests that your subcommittee approve an increase in appropriations of $500,000 per year which will enable ARS to expand its research and development efforts on biologically based methods of gypsy moth control. Such efforts are especially important for gypsy moth management in urban/suburban areas where exposure of large numbers of people to chemical insecticides may be undesirable.

Thank you for this opportunity to express our views.

Serving People and Maryland's Number One Industry - Agriculture

William Donald Schaefer
Governor
Melvin A. Steinberg
Lt. Governor

Wayne A. Cawley, Jr.
Secretary
Robert L. Walker
Deputy Secretary

STATE OF MARYLAND
DEPARTMENT OF AGRICULTURE

OFFICE OF PLANT INDUSTRIES AND PEST MANAGEMENT

January 9, 1990

Dr. Ralph Bram
National Program Staff
ARS, USDA
Building 005, BARC-W
Beltsville, Maryland 20705

Dear Dr. Bram:

As you know, the Maryland Department of Agriculture has been cooperating with scientists at the Beltsville Agricultural Research Center of the Agricultural Research Service for several years and, more recently, specifically with the Insect Chemical Ecology Laboratory, on research and development of improved gypsy moth management programs. We have found this association to be mutually beneficial to both MDA and ARS. Much useful data and information have resulted from cooperative efforts with Dick Ridgway and Ralph Webb.

We always welcome recommendations on how we might be able to build on or to expand our cooperative relationships. Therefore, if the opportunity for obtaining additional resources for gypsy moth research and development arise, I would appreciate your suggestions on how these resources might best be utilized.

Again, I thank you and your staff for continued efforts to help us deal with the gypsy moth in Maryland.

Sincerely yours,

Charles W. Puffinberger

Charles W. Puffinberger
Assistant Secretary

CWP:sd
c.c. Robert Tichenor
Richard Ridgway

50 HARRY S TRUMAN PARKWAY, ANNAPOLIS, MARYLAND 21401

(301) 841-5700
Baltimore/Annapolis Area

Maryland

(301) 261-8106
Washington Metro Area

United States Department of Agriculture
Agricultural Research Service
National Program Staff
Beltsville, Maryland 20705

February 1, 1990

Dr. Charles W. Puffinberger
Maryland Dept. of Agriculture
50 Harry S. Truman Parkway
Annapolis, Maryland 21401

Dear Dr. Puffinberger:

Thank you for your letter of January 9 concerning gypsy moth research at the Beltsville Agricultural Research Center. We certainly commend the ongoing interactions between Agricultural Research Service scientists and the Maryland Department of Agriculture. There is no question that this relationship has been mutually beneficial.

Should opportunities arise in the future that would permit expansion of our national program, there are several high priority research areas that could make substantial contributions to management systems for the gypsy moth in urban/suburban environments. Expanded research thrust areas would include: (1) improvement of sampling procedures for egg masses, larvae, and adults, including the development of technology associated with the use of pheromone traps for monitoring high density adult populations; (2) characterization and evaluation of new strains of Bacillus thuringiensis (B. t.) and of the gypsy moth nuclear polyhedrosis virus; (3) development of a ground-based management program, including the use of barrier bands for individual tree treatments in urban areas; (4) development and evaluation of improved procedures for the use of pheromones for population suppression through mating disruption; (5) expanded development and implementation of a computerized, decision-making system for urban areas to include homesites and communities, and the integration of all site-specific programs into a unified urban program; and (6) sponsorship of economic assessment of the cost-effectiveness of various alternative suppression technologies.

These thrust areas were identified over the past 3 years through an interagency review of the ARS research program which included a planning workshop held in March 1989 and a variety of other planning meetings. Resources necessary to implement such an expanded agenda would require two additional scientists and associated support as well as resources for the extramural funding of economic research. Based on current budgeting guidelines, this effort would require a permanent increase of $500,000 per year.

ars Agricultural Research Service

We look forward to continued collaboration in research aimed at developing the means to protect high-value trees for home owners, communities, parks, and other non-forest environments and at developing technology in support of the activities of gypsy moth action agencies.

Sincerely,

Ralph A. Bram

RALPH A. BRAM
National Program Leader
Medical & Veterinary Entomology
and Parasitology

cc: w/cpy incoming
W. Klassen
E. E. Pinney
J. St. John
R. L. Ridgway
J. L. Vaughn

COUNCIL OF SCIENTIFIC SOCIETY PRESIDENTS
1155 16th Street NW, Washington DC, 20036 • 202/872-4452 • FAX 202/872-4615

March 27, 1990

The Honorable Jamie L. Whitten
Chairman, Subcommittee on Rural Development,
Agriculture and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

On behalf of the Council of Scientific Society Presidents (CSSP), I wrote to you on February 12 of this year to endorse the expansion of the competitive research grants program at the U.S. Department of Agriculture. I am writing now to reaffirm CSSP's interest in this initiative.

CSSP supports the position of the Coalition for Advancement of Research on Agriculture, Food, and Environment (CARAFE), which strongly believes that full funding of the National Initiative for Research on Agriculture, Food, and Environment is crucial to maintaining the knowledge base at a level consistent with the Nation's needs in these areas.

I have enclosed five copies of our earlier letter and the resolution and respectfully request that you include them in the record of hearings held by your subcommittee on March 26 - 29, 1990.

Thank you for allowing us this opportunity to contribute to the public debate on this most important issue.

Sincerely,

William F. Prokasy

William F. Prokasy

Enclosures

1990 Executive Board

Chair: William F. Prokasy
Chair-Elect: Gerry G. Meisels
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Science Policy Advisor: Mike McCormack

The views expressed by CSSP are a consensus of its members and do not necessarily represent the official positions of their respective organizations.

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Anthony Palmieri III
Federation of Clinical Immunology Societies

Stanley R. Graham
Federation of Societies for Coatings Technology

James L. McGaugh
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William J. Lennarz
American Society for Biochemistry and Molecular Biology

Gunter Blobel
American Society for Cell Biology

George C. Martin
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Robert C. Murphy
American Society for Mass Spectrometry

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Paul F. Hopper
Institute of Food Technologists

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Materials Research Society

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Mathematical Association of America

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M. Patricia Morse
Society for Computer Simulation

Ivar Stakgold
Society for Industrial and Applied Mathematics

Paula Myers Keith
Society for Neuroscience

B. John Garrick
Society for Risk Analysis

Robert Gunn
Society of General Physiologists

Robert A. Mendelson
Society of Naval Architects and Marine Engineers

Curtis D. Klaassen
Society of Toxicology

Wilford R. Gardner
Soil Science Society of America

Arthur W. Saarinen
Undersea Medical Society

COUNCIL OF SCIENTIFIC SOCIETY PRESIDENTS
1155 16th Street NW Washington DC 20036 · 202/872-4452 · FAX 202/872-4615

February 12, 1990

The Honorable Jamie L. Whitten
Chairman, Subcommittee on Rural Development,
Agriculture and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

At its semiannual meeting last December, the Council of Scientific Society Presidents (CSSP) adopted a resolution, enclosed, endorsing the expansion of the competitive research grants program at the U.S. Department of Agriculture. Last year the Board on Agriculture of the National Research Council recommended this competitive funding initiative to enhance the Nation's knowledge base in agriculture, food, and environmental science.

Funding for basic research in these areas has not kept pace with the increased demands on the Nation's agricultural enterprise. Remaining competitive in international markets for agricultural products, and at the same time promoting nutritious diets and alleviating environmental degradation, requires vigorous efforts in basic research at the frontier of science.

The Council is composed of the presidents and other senior officers of 56 professional scientific societies with a combined membership of well over one million individuals engaged in the physical, mathematical, and life sciences as well as interdisciplinary activities.

Thank you for your consideration of CSSP's position with regard to increased funding of basic research in agricultural, food, and environmental science. I would welcome the opportunity to respond to any questions or comments you might have.

Sincerely,

William F. Prokasy

William F. Prokasy

Enclosure

1990 Executive Board

Chair: William F. Prokasy
Chair-Elect: Gerry G. Meisen
Secretary: Gordon L. Nelson
Treasurer: Clayton F. Call
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Science Policy Advisor: Mike McCormack

The views expressed by CSSP are a consensus of its members and do not necessarily represent the official positions of the organizations listed.

COUNCIL OF SCIENTIFIC SOCIETY PRESIDENTS

R E S O L U T I O N

ENDORSING THE STRENGTHENING OF A COMPETITIVE RESEARCH PROGRAM BY THE U.S. DEPARTMENT OF AGRICULTURE

WHEREAS the long-term economic and environmental health of the United States depends greatly on agriculture: and

WHEREAS new and increasing research efforts are required to assure the safety and quality of the U.S. food supply, and to assure the manageability and sustainability of our natural resources; and

WHEREAS the Board on Agriculture of the National Research Council has proposed a new competitive funding initiative entitled "Investing in Research" to be furnished by the U.S. Department of Agriculture (USDA); and

WHEREAS only a very small fraction of USDA support for research is now awarded on the basis of competitive grants:

THEREFORE, BE IT RESOLVED that the Council of Scientific Society Presidents endorses the creation of an expanded national research initiative for merit reviewed, individual investigator research in agriculture, food, and environmental science by the USDA.

Adopted by the

Council of Scientific Society Presidents

December 6, 1989

Corn Refiners Association, Inc.

1100 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 331-1634
FAX (202) 331-2054

Executive Offices

March 29, 1990

Hon. Jamie L. Whitten
Chairman
Subcommittee on Rural Development,
Agriculture and Related Agencies
Committee on Appropriations
2362 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed are two copies of testimony of Mr. Howard Valentine, chairman of the Multi-Crop Aflatoxin Working Group, which we would like to have included in the record of hearings before the subcommittee on the 1991 USDA-ARS budget.

Mr. Valentine's address is: Golden Peanut Company, 1100 Johnson Ferry Road, Suite 580, Atlanta, GA 30342.

We appreciate your assistance and your consideration of further support for aflatoxin prevention research by the ARS.

Sincerely,

Kyd D. Brenner
Director of Public Affairs

cc: B. Foster

STATEMENT OF HOWARD VALENTINE
CHAIRMAN
MULTI-CROP AFLATOXIN WORKING GROUP
SUBCOMMITTEE ON RURAL DEVELOPMENT,
AGRICULTURE AND RELATED AGENCIES
HOUSE COMMITTEE ON APPROPRIATIONS
MARCH 30, 1990

Mr. Chairman and members of the subcommittee: I am Howard E. Valentine, vice president-marketing of the Golden Peanut Company of Atlanta, Georgia. I also serve as chairman of the Multi-Crop Aflatoxin Working Group, and submit these comments on behalf of that organization.

The Multi-Crop Aflatoxin Working Group is an informal alliance of producers, processors and marketers of peanuts, corn, cottonseed and tree nuts, formed to seek scientific solutions to the problems faced from natural contamination of crops with aflatoxin. A list of the members of this group, and the wide range of agricultural interests represented, is attached.

Aflatoxin, a toxic by-product of a natural mold, costs American farmers and producers hundreds of millions of dollars each year due to lost production and the expense of identification and control measures. In addition, consumers both here and in important U.S. export markets are demanding crops and products that meet ever-decreasing specifications for levels of natural contaminants such as aflatoxin. In the face of these two pressures, it is imperative that we find ways not only to control aflatoxin, but to prevent its formation.

Fortunately, scientific developments of the past several years have suggested several ways in which this objective might be met. The working group has identified two of these areas, (development of aflatoxin resistant varieties of major crops and development of biocompetitive controls to the aflatoxin-forming mold) as the most promising ways in which to eliminate aflatoxin from major crops.

In FY 1990, your committee agreed to increase USDA-ARS funding by $750,000 to begin a program devoted solely to prevention of aflatoxin formation. These funds have enabled the ARS to begin an effective and ambitious program. However, in order to meet a goal of eliminating aflatoxin by the year 2000, we believe that this commitment must be increased. We are requesting that the funds granted last year be increased to $1.25 million in FY 1991. In addition, we have asked the ARS to devote $1.5 million of any increase they receive in food safety research funds to this goal. Together, a funding level of $2.75 million above the baseline ARS budget will meet the level which research directors in industry and producer organizations have told us is necessary for this project.

ARS has moved quickly to implement this new program. Commitments for 8 new research projects, and 2 existing projects, using the funds provided by this committee in FY 1990, were made earlier this month. ARS sought the advice and review of senior researchers from producer, processing and market organizations in their selection of these projects, and our working groups feels that the projects represent practical approaches which are not

only technically feasible, but can be incorporated in the food production and marketing system. A list of the projects funded under this program in FY 1990 is appended to my statement.

We are certainly aware of the intense pressures you face in allocating a limited amount of agricultural research funding among numerous projects in a time of budget constraints. We do, however, feel that the current and potential costs of aflatoxin to U.S. agriculture are such that the modest commitment we seek will pay major dividends to U.S. agriculture and consumers in the future.

Thank you, and we appreciate your concern and support on this issue.

Attachments (2)

AFLATOXIN PREVENTION RESEARCH - FY 1990

* **Identification of Peanut Germplasm with Resistance to Aflatoxin** (Peanuts)
Corley Holbrook, Coastal Plain Experiment Station, Tifton, GA - $43,000

* **Breeding Peanuts for Aflatoxin Resistance**
Tom Stalker, N. C. State University, Raleigh, NC - $12,500

* **Molecular Approaches to Control Aflatoxin Contamination of Food Sources** (Generic)
Gary Payne, N. C. Sate University, Raleigh, NC - $58,051

* **Biological Control of Aspergillus flavus and Aspergillus parasiticus by Paecilomyces lilacinus** (Generic)
Dave Wilson, Coastal Plain Experiment Station, Tifton, GA- $40,000

* **Management of Aflatoxin Contamination of Cottonseeds Using Seed-borne Endophytic Bacteria** (Cotton)
I. J. Misaghi, University of Arizona-Tuscon, Tuscon, AZ- $32,641

* **Genetic Variation in the Resistance of Various Cultivars of Pistachio, Almond, and Walnut to Aspergillus flavus/parasiticus and Determination of Environmental and Ecological Factors Necessary for Stable and Efficient Preharvest Aflatoxin Suppression Facilitated by the Use of Atoxigenic Strains of A. flavus/parasiticus** (Nut Trees)
T. Michalides, SJVAR & EC, Parlier, California - $83,024

* **Identification of Molecular Markers Associated with Genes for Preharvest Resistance in Corn to Aspergillus flavus and Aflatoxin Production** (Corn)
T. R. Rocheford, University of Illinois, Urbana, IL- $24,748

* **Development of Biological Control Agents to Prevent Preharvest Aflatoxin Contamination of Corn** (Corn)
Laura Sweets, Iowa State University, Ames, Iowa - $35,000

* **Biochemical, Environmental & Microbiological Resistance for Preharvest Aflatoxin Resistance** (Generic)
Dick Cole, National Peanut Research Lab, Dawson, GA $166,250

* **Biocontrol of A. flavus Using Biocompetitive Agents, Enhancement of Host Plant Resistance** (Generic)
Ed Cleveland/Peter Cotty, Southern Regional Research Center, New Orleans, LA - $166,250

MULTI-CROP AFLATOXIN WORKING GROUP

California Pistachio Commission
1915 N. Fine Avenue
Fresno, California 93727

Corn Refiners Association, Inc.
1100 Connecticut Avenue, N. W., Suite 1120
Washington, D. C. 20036

National Corn Growers Association
1000 Executive Parkway, Suite 105
St. Louis, Missouri 63141

National Cottonseed Products Association
P. O. Box 12023
Memphis, Tennessee 38182

National Cotton Council
1110 Vermont Avenue, Suite 430
Washington, D. C. 20005

National Peanut Growers Association
P. O. Box 1202
Dothan, Alabama 36303

National Peanut Council
1500 King Street, Suite 301
Alexandria, Virginia 22314

Prune, Raisin, & Walnut Marketing Board
3445 N. First, Suite 101
Fresno, California 93726

March 30, 1990

The Honorable Jamie L. Whitten, Chairman
Committee on Appropriations
Subcommittee on Rural Development,
Agriculture and Related Agencies
United States House of Representatives
2362 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Whitten:

As the House Appropriations Subcommittee on Rural Development, Agriculture and Related Agencies considers fiscal year 1991 appropriations, the American Soybean Association would appreciate the opportunity to share our concerns and goals. We would appreciate having the enclosed testimony entered into the Committee Record.

Soybeans farmers across the country appreciate your continued leadership and support for agriculture. We look forward to working with you toward our common goals.

Sincerely,

Marlyn Jorgensen
President

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TESTIMONY OF THE AMERICAN SOYBEAN ASSOCIATION
SUBMITTED TO THE
HOUSE APPROPRIATIONS SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES
UNITED STATES HOUSE OF REPRESENTATIVES

The American Soybean Association is a national not-for-profit organization representing U.S. soybean farmers with members in 29 states. ASA seeks to increase the opportunity for U.S. farmer profitability through its market development, research, public affairs and trade policy programs.

This year, agriculture stands at a crossroads. With the development of the 1990 Farm Bill and the Uruguay Round of the GATT negotiations in the works, policies are being made that will shape the future of U.S. agriculture. In addition, world events over the last year have opened up tremendous opportunities for farmers in the United States. This year, as never before, properly funded programs must be in place to allow the U.S. farmer to compete and profit in a rapidly changing world.

Agricultural Research

A good program of agricultural research is the foundation of U.S. agriculture. A solid research and information distribution system is vitally important in enabling U.S. farmers to compete in today's international marketplace.

Each year, ASA's farmer-members review the research needs of soybeans and invest their own funds through farmer-controlled state checkoff programs. We are making a greater commitment toward research and promotion this year by seeking a national checkoff program which we hope will soon be enacted by Congress.

In 1989, soybean checkoff funds were used to fund or expand 291 soybean research and extension education projects. However, while U.S. soybean farmers are offsetting some of the cost of soybean research, they cannot do it all. The needs are so great that federal funding of soybean production research and new use research is essential to a healthy soybean industry.

In 1988 - the latest year for which complete financial records are available - public funding for soybean research totaled $66.4 million. Federal support accounted for 52 percent of the total, with state appropriations, grants, product sales and industry support making up the balance.

Although public support for soybean research has increased slightly each year, the annual increase, when adjusted for inflation, is not keeping pace with the cost of doing business. Research challenges are far greater than available funding.

The President's recent proposal of a $100 million to fund the first year of a major initiative for research on agriculture,

food and the environment is a step in the right direction. However, soybean farmers have some concerns with the proposal.

In a study released last year, the National Academy of Sciences proposed that research support for agriculture, food and the environment be increased by $500 million annually. However, the Presidential initiative reduces the total amount to $100 million, including funding of the continuation of the current competitive grants program at $42.6 million. Therefore, the National Initiative is only $57.4 million in new monies.

While ASA is supportive of the concept of the President's Initiative, soybean farmers believe the Initiative should be entirely funded with new federal money and not adversely affect existing grants programs. As a member of the Coalition for Advancement of Research on Agriculture, Food, and Environment (CARAFE), we support an appropriations level of $150 million for FY 91, including $107.4 in new monies.

The Administration's budget also proposes an increase of $52.5 million to continue and expand water quality programs. The major objective of the Initiative is to provide farmers, ranchers, and other land managers with the information necessary to voluntarily adopt improved, environmentally-sound management practices which to not sacrifice profitability. ASA supports this objective and the need increased funding.

Soybean farmers want sound environmental policy, based on scientific facts, which allow them to produce in a competitive marketplace in a profitable fashion. We support that USDA-proposed funding of $4.5 million for low-input sustainable agriculture research if tied to Integrated Crop Management. In other words, we must be sure that research considers all production factors for long-term sustained productivity, profitability and ecologically sound consequences.

Public concerns for the environment, food safety, diet and health are requiring ever increasing amounts of research funding. However, funding for environmental research should not be at the expense of soybean applied production research. Without adequate financial support, soybean farmers risk losing research programs in needed areas of tillage, weed control, pest control and varietal development. These basic needs are vital to improve farmers' abilities to compete in both domestic and export markets.

Major emphasis needs to be placed on research to increase the competitiveness and profitability of U.S. soybean farmers. U.S. researchers are finding it difficult to obtain adequate funding for production and composition research while our South American competitors are directing their funding and personnel into lowering the cost or producing soybeans. If we don't do something to catch up, we'll soon be put out of business.

We must find ways to reduce production costs and improve the profitability of soybean production. Research is needed to increase yields and profits of all soybean farmers. Southern soybean farmers need specific research to boost yields. ASA requests $300,000 to develop a grants program which addresses research and educational programs needed to improve southern soybean production.

In addition, ASA supports funding in the amount of $500,000 to establish a research grants effort in soybean composition research. Funding is needed to expand research on understanding soybean protein/oil synthesis, the negative correlation between protein content and yield, and the genetic and environmental factors influencing composition. Soybeans with greater amounts of oil and protein are needed to meet the demands of the growing world market and increase U.S. competitiveness.

Research in weed and pest control for soybean farmers is also vital. Scientists estimate that more than 20 million acres of land in the U.S. are infested with the cyst nematode. Nationally, soybean producers lost an estimated $600 million dollars in 1989 due to the increased infestation of this pest. ASA supports expanded for soybean cyst nematode research.

ASA also supports new federal appropriations to encourage further development of soybean oil-based printing ink. Soybean oil ink is now being used by 1/3 of the nation's 9100 newspapers, including 1/2 of the 1700 daily newspapers. Use of soy ink is spreading rapidly into the commercial print market. Within the past year, the number of companies producing soy ink for commercial printers has grown from one to at least eight. Research initiatives will help further the usage of this environmentally desirable product. We urge the Committee to increase funding for soybean oil-based ink by $140,000 for a total of $260,000.

The 1990's promise to be exciting times for soybean research. The need to increase production efficiency and profits has never been greater. If the U.S. is to remain competitive in the soybean world market, soybean research must be on the leading edge of science. Funding must be made available for research in areas which will increase the profitability of the U.S. soybean crop.

Export Programs

World events in recent months have opened many doors for U.S. agriculture. The move toward democracy in Eastern Europe, Central America and the Soviet Union creates tremendous growth potential for U.S. commodities, particularly soybeans.

The Soviet Union currently has a protein deficienty of 15-17 million metric tons. This means obvious growing demand for soybeans and soybean products. The issue, however, is whether or

not it will be U.S. soybean farmers - or our foreign competition - that meets that demand.

Market development programs funded through the Foreign Agriculture Service (FAS) are essential if the U.S. is to take advantage of the growing opportunities in the world market. Since its inception in 1954, long-term development activity has been the primary focus of FAS. Working with approximately 75 "cooperators" including the American Soybean Association, FAS in partnership with U.S. farmers, has been responsible for increased U.S. agricultural exports in recent years.

With a network of eleven overseas offices working in over 80 countries, ASA is actively involved in meeting the many marketing challenges soybean farmers face. ASA success is due to the ability to combine farmer-invested promotion dollars overseas with FAS funds to make foreign consumers more aware of soybean products. This combination is essential to increasing U.S. soybean farmers' share of the growing world vegetable oil and protein markets.

ASA-sponsored livestock feeding trials in the Soviet Union were first initiated in 1988. The results confirmed that soybean ration significantly outperformed the traditional ration. Due to the successes of these feeding trials, Soviet imports of soybeans increased from 68,200 metric tons to 830,700 metric tons from FY 87 to FY 88. At the same time, soybean meal imports went from zero to 1.3 million metric tons.

The work in the Soviet Union is only one example of the success of FAS funded projects around the world. Similar stories can be told in Hungary, Romania, Spain, Egypt, Venezuela, China, Korea, South Asia and more.

However, FAS presence overseas has been threatened recently by rising costs. Foreign inflation combined with the devalued dollar have made it difficult for foreign market development programs to continue at the same level. Limited funding have made expanded efforts practically impossible.

USDA has proposed $103.5 million in funding for FAS in FY 91, an increase of $2.2 million over the 1990 level. However, with the tremendous increase in opportunities and the decline in spending power, this level is not enough. ASA supports a funding level of $115 million for FAS. ASA also recommends that USDA increase allocation of human resources for FAS to ensure that programs are carried out efficiently and effectively.

In 1985, the Targeted Export Assistance (TEA) program was mandated by Congress to assist commodities whose sales have suffered because of unfair foreign trade practices. The success of the program has surprised even its supporters.

TEA-funded programs have enabled the American Soybean Association to achieve numerous results:

- In Greece, seven brands of soybean oil are found when none existed in 1986.
- In Italy, ASA's third party cooperator has grown from a small regional bottler to a large diversified manufacturer of soy products.
- In Portugal, significant strides have been made in improving soybean oil quality.
- In Spain, food manufacturers now look to ASA as a primary source of technical information and assistance on the use of fats and oils.
- In West Germany, major institutional food manufacturers identify their products as "soya".
- In the United Kingdom, all the major supermarkets now carry private "own label brands" of soybean oil margarine.

ASA strongly supports continuation of the TEA program with a funding level at the previous authorization level of $325 million annually. Increased funding would allow ASA to continue our work toward improving consumer awareness of soya and soybean oil products.

The potential for future growth in soybean and soybean product exports is great in the developing nations in Asia, Africa and Latin America. Most of these nations want to import more U.S. soybeans, meal and oil. However, many lack the funds and infrastructure to utilize imported commodities.

The export credit programs administered by FAS are essential in promoting foreign consumption of U.S. products. USDA's GSM-102 and GSM-103 programs help stimulate U.S. exports by assuring the availability of bank financing to foreign purchasers. The Commodity Credit Corporation guarantees private bank loans to developing nations for the import of U.S. commodities.

Funding for the export credit programs in the Administration's budget is recommended at the 1990 levels of $5 billion for GSM-102 and $500 million for GSM-103. Since the export credit programs are guarantees rather than direct budget outlays, ASA supports continuation of the GSM-102 program with annual funding authorization at no less than $7.5 billion. ASA supports funding authority for GSM-103 at no less than $1 billion annually, with at least $200 million of the credit guarantees being used to finance needed infrastructure in developing nations to facilitate the more efficient use of imported commodities.

ASA also supports revision of the P.L. 480 Program to make it more oriented to developing foreign markets, to give USDA greater control over the program, and to direct that the program be used to facilitate infrastructure and market development.

The American Soybean Association appreciates the support and leadership of the Subcommittee and looks forward to a continued close working relationship.

BEFORE THE SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE, AND RELATED
AGENCIES OF THE HOUSE COMMITTEE ON APPROPRIATIONS

AGRICULTURAL RESEARCH SERVICE
FACILITY IN FRESNO CALIFORNIA

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Submitted: March 31, 1990

BEFORE THE SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE, AND RELATED
AGENCIES OF THE HOUSE COMMITTEE ON APPROPRIATIONS

AGRICULTURAL
RESEARCH SERVICE
FACILITY IN FRESNO CALIFORNIA

We request that funds be included in the FY 1991 appropriations for the Agricultural Research Service (ARS) for final planning for the construction of a new facility in Fresno, California. We do so in behalf of fresh fruit, vegetable, dried fruit and nut industries from the State of California listed in the attachment. In addition, we believe that the Fresno facility provides valuable research in areas that benefit the nation's agriculture as a whole.

The work of the Fresno facility is recognized nationally and internationally for its valuable research and new facilities and equipment are vitally needed to replace old and temporary facilities. The cost of construction of those facilities and specialized equipment is estimated to be approximately $29 million based on a 1993 construction date mid point. The construction of this facility will significantly improve the capabilities of the ARS to provide an even greater benefit to agriculture, not only in the western United States, but nationally. It is believed that $3.5 million in final planning/design funds are needed in FY 1991. These funds are necessary to complete the final planning so that preparations can be made for construction shortly thereafter. It is important that research keep up with the critical issues facing agriculture, such as production and marketing of commodities, air, water, soil quality, research on post-harvest quality of crops, breaking down quarantine barriers, which are essential if we are to sustain and potentially increase both our domestic and export markets.

The Fresno facility is uniquely situated and uniquely qualified to continue and expand the research in these critical areas. However, in order to do so effectively, there is a need to modernize the facilities. Such modernization is long overdue and we wish to fully support this modernization and to communicate the critical importance of doing so to the future of agriculture.

Attached also is a detailed statement demonstrating the need for the new facility and the areas of research.

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SUMMARY OF REQUEST

California Agriculture and related industries (listed in attachment) request that the committee include in its fiscal year 1991 appropriations, $3.5 million in final planning and design funds for the Agriculture Research Service (ARS) for the construction of a new facility in Fresno California.

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EXECUTIVE SUMMARY

The Fresno Location of the Agricultural Research Service (ARS) of the United States Department of Agriculture (USDA) is uniquely situated in the San Joaquin Valley of California. Research conducted at the Location is significant, not only to the USDA-ARS, but to the nation. Both the laboratories at the Location, the Horticultural Crops Research Laboratory and the Water Management Research Laboratory, are recognized nationally and internationally for their research activities.

The San Joaquin Valley is the most intensive and extensive agricultural production area in the world and Fresno County, the most productive county in the USA, is considered by many to be the horticultural center of the world. Agriculture production of this Valley is the major source (over 53%) of the U.S. production of many fresh fruits and vegetables and dried fruit and nut crops. The 1984 farm value of these commodities was approximately $16 billion. Export of some of these commodities exceeds 60% of the U.S. production and these commodities, therefore, are significant not only to California but to the nation.

Key issues facing the production and marketing of these commodities include contamination of the air, water, soil, and food produced on these lands. Contamination may be due to pesticides, used either for the production or postharvest processing of these commodities, or to the transformation and/or transport of naturally occurring minerals in the soil. Some hazardous chemicals (i.e., selenium) occur naturally. Pressure to reduce or eliminate these problems will continue from federal and state action agencies, consumers, and environmental groups. The demand for higher water quality by these same groups, and increasing urban, industrial, and recreational uses are placing a premium on water for western agriculture. Recent drought conditions have also intensified these problems. Research conducted at the Location on these problems has and will have national and international significance.

Many of the stone fruit and table grape cultivars now used throughout the world were developed at the Location. The research on postharvest quality and preservation has made new domestic and export markets accessable to a wide variety of horticultural and vegetable crops.

The Fresno Location has contributed a great deal towards providing the national and international consumer with quality agricultural products. Significant advances have also been made in water management, utilization, and reduction of natural or applied groundwater contaminants.

RECOMMENDATIONS

The fresh fruit/vegetable and dried fruit/nut industries and key agencies in water management support new facilities for the ARS Fresno Location.

New research facilities and equipment are needed to replace old and temporary facilities. The cost of contruction of those facilities and specialized equipment is estimated to be about $29 million based on a 1993 construction date midpoint. This will provide ARS with the capabilities to have an even greater impact on agriculture in the western United States and the nation.

USDA-ARS FRESNO LOCATION BACKGROUND INFORMATION

California is the largest producer of fresh fruits and vegetables and dried fruits and nuts in the United States. Many of the commodities could be considered unique to California (i.e., stone fruits, table grapes, raisins, walnuts, lettuce) in regards to U.S. production. There is a continuing and documented need to maintain or increase the quality of western grown produce after harvest and through the marketing channels while at the same time reducing chemical usage (i.e. insecticides, fungicides, postharvest waxes), and residues often associated with them. Postharvest chemicals are routinely used to disinfest or protect commodities, reduce decay, extend shelf life and their marketability and to enhance the visual and sensory appeals in the market place. Increasing regulatory agency and consumer pressure has profoundly affected both the production and postharvest sectors of agriculture. This pressure has also influenced the developers of agricultural chemicals. Unacceptable risks and developmental costs have almost eliminated development of new fungicides and pesticides for postharvest use. All of these factors necessitate the development of nonchemical alternatives to protect horticultural commodities and to provide high quality products without undesirable chemical residues. This pressure is not unique to the U.S. but is found also in most other countries of the western hemisphere. Foreign markets contribute substantially to the economic well being of western states and U.S. agriculture. In order to increase our domestic and foreign markets, the U.S. needs to increase the quality and/or quantity of western agriculture products reaching the market place. New export markets need to be developed in all the Pacific Rim Countries such as Japan, the Far East, New Zealand, Australia, and South America. New markets also need to be developed for agricultural products in other parts of the western hemisphere. Often these markets are difficult to open because of chemical residue tolerances that are difficult for U.S. exports to meet. In addition, quality deterioration may occur because of long transit times required to reach these markets. We must therefore, through research, increase our competitive edge by increasing product quality, reducing or eliminating residues, increasing market life, and decreasing production and postharvest costs. New and innovative methods will be required to meet these challenges.

The farm value of all California agricultural products in 1984 was almost $16 billion at the farm gate, or about 11% of the total U.S. production. The total value of California agriculture, including postharvest handling, processing, transportation, or treatments for pest control approaches $53 billion annually. Agriculture is the largest employer in California.

California produces about 53% of the nation's fresh fruits and vegetables and dried fruits and nuts. For many commodities, over 20% of the production is exported; some can reach 60%. This provides a significant contribution to the economy of California and the nation's balance of payments.

One of the key issues facing agriculture in general is the real or perceived impact of pesticides on the consumer and the environment, whether they be used in production agriculture or after the commodities have been harvested. Chemical preservatives (i.e., fungicides, fumigants) are routinely used to preserve the quality or extend the market life of the high quality

products derived from western agriculture for sale domestically or in export markets. The objectives of postharvest research in ARS are to increase product quality, open more domestic and export markets, extend market windows, and reduce the amount of chemicals used in order to protect the consumer. Many areas of research to meet these objectives can be envisioned such as alternative methods for controlling spoilage organisms, (i.e., on biological control) new and innovative methods to extend market life, development of alternative strategies to fumigants for breaking down quarantine barriers, and the breeding of pest- or stress-resistant varieties or varieties opening up larger domestic and foreign markets by extension of harvest seasons or increased quality.

Of major concern to both the public and regulatory agencies is water quality. Pollution of the water systems is a major national problem, and even more amplified in the western United States because of the diverse and extensive agricultural production sector, the intensity of pesticide use because of acute pest problems (i.e., insects, plant pathogens), and the lack of adequate rainfall to help "clean up" the system and adequately recharge the groundwater supply. Pesticide residues may also be carried over into the marketing channels. Water quality in the West can also be affected by natural components (i.e., salt accumulation and toxic elements such as selenium) which become aggravated by poor water management practices. Because of the continuing and increasing demands (population growth) for water for other than agricultural uses, more efficient schemes of agricultural water management must be devised as well as methods to maintain or increase water quality. Recent droughts have also placed an increasing premium on agricultural water.

As the western U.S. population continues to grow (i.e., approximately 700,000 in California in 1989), the demand for urban water supplies, recreation, and manufacturing increases proportionately. Since most of the inexpensive development of water supplies has already taken place, the potential for acquiring additional water is remote. For example, no new water developments are planned by the State of California in the near future. Agriculture currently uses 82% (27 MAF)[1/] of all the water diverted in California. As a result, there is growing pressure by urban and recreational interests groups for agriculture to give up or sell part of its water supply. Research needs to be directed towards maintaining or improving water quality (salt accumulation, selenium, etc.), irrigation efficiency, and reasonable water use with the goals of maintaining productivity and possibly freeing some agricultural water for other water uses.

In arid and semi-arid regions, irrigation causes salts to accumulate in soil. Salts need to be leached out by draining methods and the drainage outflow requires disposal. Since disposal of saline drainage water continues to plague the San Joaquin Valley, research needs to emphasize a solution to this problem. Solving irrigation and drainage problems is vital for the long term survival of irrigated agriculture in California and many parts of the U.S. and for maintaining the stability of many food and fiber crops now being grown predominently in California.

[1/] 1 MAF = 1 million acre feet of water; 1 AC = 326,000 gallons of water.

Studies investigating the use of accumulator plants to remove toxic elements from soil and waters have implications for human and animal health which extend throughout the United States (i.e., selenium). If accumulator plant species are identified and water and cultural management methods can be developed to use these species to extract toxic elements from the soil and water, then levels of toxic elements can be lowered in soil and the area can then be safely used for agriculture and other purposes.

In an era when water resource management is vital for economic survival of western agriculture, research needs to optimize plant nutrients/water interaction to ensure the productivity, sustainability, and profitability of agriculture. As our best land resources are quickly being used by new urban, industrial, and recreational developments, the ability to maintain productivity and sustainability on marginal lands in a minimally toxic or nontoxic manner will be vital.

USDA-ARS RESEARCH AT THE FRESNO, CALIFORNIA LOCATION

The USDA-ARS research facility at Fresno is located in the center of the most unique, intensive, and diverse agricultural growing area of California and the United States. Thus, it is in an ideal situation to broach many of the problems associated with western agriculture. The two Laboratories at the Location, Horticultural Crops Research Laboratory (HCRL) and Water Management Research Laboratory (WMRL), have conducted research for years on the key issues facing production- and postharvest agriculture in the west. These laboratories are so situated that they can respond quickly to both short and long term problems through their research efforts. One significant example was the development of commodity treatments for disinfestation of Mediterranean fruit flies during the California Medfly crisis in the early 1980's. If tropical fruit flies become established in California and other areas of the West, the Fresno research facilities would be a logical location for research on these destructive pests that have national and international quarantine implications. Many of the advances to increase water use efficiency and quality and increasing the quality of California commodities for domestic and export markets have been contributed by scientists at the ARS facility. The facility is composed of approximately 20 scientists and 55 support personnel, not including visiting scientists, post-docs, graduate and undergraduate students and cooperative agreement employees.

HORTICULTURAL CROPS RESEARCH LABORATORY

The laboratory is organized into two research units, each having multidisciplinary interests: Commodity Protection and Quarantine Insect Research and Postharvest Quality and Genetics Research. There are six research entomologists and nine plant scientists in the units, respectively. Fields of study include plant physiology, horticulture, plant pathology, packaging and transportation, plant breeding and genetics, insect biology, ecology, and pathology and control of insects by microbes. In pursuit of their research goals, staff members cooperate with other Federal and State agencies, universities and numerous commodity organizations. The research encompasses work

on western grown fresh fruits and vegetables, dried fruits and nuts, and insects and disease organisms that attack them. The results of the basic and applied research benefit agriculture and consumers throughout the U.S., because California produce is shipped to every part of the country. Much of the research also benefits other areas of the U.S. having similar crops. Additionally, the research results facilitate expansion of foreign markets because information and techniques that are developed at the Laboratory help maintain quality during the long transit periods overseas and meet quarantine requirements to increase export markets.

WATER MANAGEMENT RESEARCH LABORATORY

The mission of the Water Management Research Laboratory is to: (1) develop advanced water management practices, methods, equipment, and systems to utilize soil, water, and energy resources efficiently and to increase sustainability and crop productivity in irrigated agriculture; (2) evaluate and predict consequences of water management practices on the quality of surface and groundwater; (3) reduce pollution of soil and water by naturally occurring and agricultural chemicals through improved water management, and (4) develop irrigation management procedures for improving agricultural sustainability and environmental health, and conserving irrigation water supplies. The staff consists of four research scientists and their support staff. These goals are met by in-house as well as cooperative research with other private, state and federal institutions having a vested interest in water quality and management. The results of the basic and applied research benefit agriculture and the general public because they improve the efficiency of water use and the quality of the environment under irrigated conditions. Additionally, many of the results obtained can be transferred to other areas of the U.S. and the world where irrigated agriculture is practiced.

The research results from the Location are presented at international, national, and regional meetings and published in scientific and technical journals, USDA publications, and in farm and environmental magazines. Substantial technology transfer projects are conducted to ensure that research results are used properly.

RECENT FRESNO RESEARCH ACCOMPLISHMENTS

Horticultural Crops Research Laboratory

* Developed quarantine treatments and all ancillary data lifting the bans on export of walnuts and nectarines to Japan. Opened a market of $10 million per year for walnuts and a projected market of $10-50 million for nectarines.

* In cooperation with the USDA-ARS Hawaii Laboratory, developed fumigation schedules for fruit flies infesting numerous California commodities, thus allowing interstate and export markets to continue if the insects are introduced to the mainland.

* Through innovative and more rapid breeding techniques, introduced new and novel table grape and stone fruit cultivars providing increased domestic and foreign markets. The value of new cultivars resulting from this research is worth over $400 million annually.

* Developed and patented a formulation of an insect virus as a protectant for dried fruits and nuts against Indianmeal moth (a worldwide pest) in marketing channels.

* Developed much of the data used by industry for the optimum storage and transportation of fresh fruits and vegetables saving innumerable losses to the industry.

* Developed an insect pathogenic nematode for control of Hawaiian fruit flies that provides another alternative for control of the species.

* Contributed significantly to the efficient and reduced use of sulfur dioxide for decay control in table grapes; an industry valued at over $500 million annually.

* Defined the uses of plastic films for maintaining the quality, extension of shelf-life and extended availability of vegetables and fruits.

* Developed alternative technologies for controlling brown rot of peaches.

* Determined the phytotoxic limits of various quarantine fumigation treatments on citrus shipped to domestic and export markets.

Water Management Research Laboratory

* Developed innovative groundwater recharge methodologies for protecting and conserving the quality and quantity of ground water supplies of the San Joaquin Valley.

* Developed management strategies for irrigation and drainage water in central California regions containing toxic levels of elements (selenium) in the soil and drainage waters. For example, recycling of saline drainage water and use of plants efficient in taking up selenium.

* Identified mustard plants as most efficient species in lowering selenium concentrations in soil through plant uptake.

* Developed design and management criteria for highly water-efficient surface and subsurface drip irrigation/fertilization of row and tree crops.

* Developed optimum water requirements for the following major crops grown in the San Joaquin Valley: cotton, tomato, cantaloupe, broccoli, sweet corn, and sugar beets.

* Developed computerized management techniques for real time control of irrigation systems.

* Developed instrumentation for electronic measurement of soil water and evaporation.

* Developed design criteria for low pressure lateral move precision irrigation systems.

COOPERATIVE RESEARCH

Scientists at the Location have cooperated with numerous other ARS, SCS, and APHIS laboratories throughout the United States and Europe. Current or past research also includes cooperation with the University of California Extension Service and scientists at U.C. Davis, Berkeley, and Riverside. Specific Cooperative Agreements have also been funded with the Riverside, Berkeley and Davis campuses. Cooperative projects have or are being conducted also with the California State University, Fresno. The base for this cooperation is very broad covering most disciplines represented at the two Laboratories. Cooperative agreements with other Land Grant Universities such as Texas A&M have also have been implemented.

Scientists at the Location have had numerous cooperative agreements with other U.S. agencies such as the Department of Energy, USDA's Soil Conservation Service and the U.S. Geological Survey. Both Laboratories have conducted research with various private organizations such as water districts and commodity groups. This cooperation, through Trust and Reimbursable Agreements has helped solve specific program needs of the Location on a timely basis. It has also provided windfalls for the Location's increasingly tight budget. Cooperative research has also been conducted with various state of California agencies such as the Water Resources Board and the California Department of Food and Agriculture.

Both Laboratories are recognized internationally for their research activities as indicated by a number of Tri-National and PL-480 Projects and BARD grants with Israel. Scientists at the Location have been asked to collaborate on program reviews of institutions throughout the world. A number of scientists have spent sabbatical leaves at the Location and other foreign and domestic scientists/policy makers frequently visit the Location.

Many of our scientists have attended international meetings and have been involved as consultants with international programs for many agencies. The location is frequently visited by scientists from all over the world interested in water management, postharvest and breeding program.

FACILITIES

In 1985, the USDA-ARS conducted a Real Property Utilization Survey of the Fresno Location. Much of their findings are enumerated below. All available land and facilities at the Fresno research complex are being used to the

maximum (General Services Administration control number for this site is 1205-07276). This is evidenced by the need to lease additional building space and the requirement for additional off-station field plots. Many buildings are overcrowded. In all cases, the present buildings constructed in the 1930's are below optimum in regard to floor space available for research as well as the "mix" of projects being conducted at any given time. None meet California seismic building codes. All permanent space was at one time modified to meet laboratory or office requirements. About 30% of the Location staff are housed in these permanent facilities while the rest of the staff is housed in temporary laboratory space composed of converted mobile trailer-office space units. These factors have contributed towards development of design criteria for a new office/laboratory facility to be placed on the newly acquired (1988) 30 acres. The new property, directly adjacent to the Location, was purchased to increase available space for field plots and the breeding programs, cut down significant off-Location travel for field plots and provide space for construction of planned permanent facilities.

When the Agency was forced to vacate 10,000 square feet of laboratory space at the Fresno airport, dislocated personnel were placed in temporary laboratory trailers at Peach Avenue, remodeled for office/laboratory space. As of 1988, all laboratories and staff in Fresno were consolidated at the ARS Peach Avenue location. The addition of these trailers beginning in 1984 exacerbated an already existing overcrowded situation, both for laboratory space and experimental field plots. Based on an estimated 10 year expected life, many of these facilities will be unusable by 1994. Annual utility costs for the location are approximately $128,000/year or $7,000 per research scientist. These costs point to the energy inefficiency of the present facilities. Shop and storage facilities are still in leased facilities off the Location and present continuous security problems.

The Fresno research facility is strategically located close to major crop production areas and in the center of the State with the most extensive irrigated agricultural system in the world (10,000,000 acres). It is in close proximity to horticultural supplies via packinghouses/agricultural industries — a critical factor since perishable commodities require a very short transit time between harvest and set-up of experiments. Production and processing areas are also nearby. Proximity to the California State University, Fresno and University of California agricultural research centers is highly desirable due to available professional and student assistance and the need for professional cooperation. Proximity to urban areas and airport are also highly desirable because of the large number of local purchases made and numerous air shipments of commodities made annually.

In conclusion, the Horticultural Crops Research Laboratory and Water Management Research Laboratory, Fresno, California, are performing a vital research function for the Agency and the nation. Its present location is strategic to the accomplishment of the ARS research mission.

NEEDS FOR THE FUTURE

RESEARCH PROGRAMS

The previous discussions have indicated the importance of the ARS-Fresno Location to western agriculture. These USDA-ARS Laboratories are in an ideal situation to provide a research base for the modernization and sustainability of agriculture for many decades. The San Joaquin Valley has a unique climate, a diversity of high value crops and differing soil and water types to provide a broad base for research from production through harvest and to the eventual consumer. With the increasing needs for improved environmental quality and human health, both the production and postharvest sectors of agriculture will be required to reduce environmental pollution and undesirable residues in soil, water, air and food. The Fresno Location will make significant contributions to alleviating these pressures. Much of the research conducted at the Location is already geared towards reducing undesirable residues and discovering new and innovative methods to reduce or eliminate the dependence on agricultural chemicals and increasing water and soil quality and efficiency. The lack of many incentives, and the abundance of disincentives to develop new agricultural chemicals for the postharvest arena, justify the need for new and innovative research. The leading forces to bring changes will be the regulatory agencies, the need for consumer and environmental protection, and the need to develop land and water resources.

Horticultural Crops Research Laboratory

In the future, the Fresno Location must be able to identify and research areas of concern to agriculture. The infrastructure now exists, but facilities and equipment are old and not adequate for meeting the challenge ahead. A significant portion of the research at the Horticultural Crops Research Laboratory is directed toward finding alternatives to the presently used postharvest chemicals, for decay and insect control. Much more research is needed on the use of modified atmospheres and unique innovations in storage technology to preserve and extend quality of fresh and processed horticultural crops, reduce losses, and at the same time provide consumer safety. More emphasis needs to be placed on finding alternative methods to insect control (i.e., biological and microbiological) which will not reduce the value or quality of the treated commodity. The scientific literature is replete with records of insects infesting certain agronomic plants. However, few of the insect-plant interactions have been substantiated. We have developed considerable information on the basic biology of pests preventing export of commodities to certain countries (i.e., Japan). The data have shown that in a number of situations, the commodities are extremely poor hosts at best. These data could be used to support meeting quarantine treatments in lieu of a specific treatment or use of a much less severe treatment. This information would also provide us with a logical baseline to design quarantine treatments that provide security but not overkill as is the case now. In order to accomplish this objective, we need to supplement our present staff with new insect ecologists/physiologists.

Currently, most dried fruits and nuts are disinfested at least once after harvest and before eventual consumption. If not treated, losses due to damage

and reduction in quality would be substantial. We need to develop new methods of treating these high-value commodities that do not impart residues or undesirable reductions in quality. Many alternatives already have been developed such as, controlled atmospheres, hot and cold treatments, behavior modifying chemicals, and microbial control agents. In the future, we need to exploit these methods, to make them more economically competitive and determine how they can be used together with other methods. Entomologists from a number speciality areas need to be recruited to meet these needs.

In the case of the plant sciences, we need more basic and applied research on the host-pathogen (decay organisms) interactions in order to identify weak links in the pathogen biology. These weak links can be exploited to develop new or less severe commodity treatments. Little is known about the physiological and biochemical basis of inherited traits such as resistance, susceptibility to various environmental factors and quality. In addition to the present research, extension of our understanding of plant physiology and biochemistry will also provide us with insights into improving fruit quality, storage life and consumer acceptance. Both plant pathology and physiology disciplines need more substantial support to approach these research areas.

Many cultivars of stone fruits and grapes now in commercial use were developed at the Fresno Location. Until the present, most of these cultivars have been developed to increase markets by way of their sensory qualities or increasing the time period for a market. However, we know little about the physiology and biochemistry of what consititues quality. We need to have a basic "understanding" of quality so that we can be more selective in our breeding programs. These data could be used to screen out unwanted germplasm at an early date, thus reducing the time required for cultivar development. This information base would also aid plant breeders in understanding the basic mechanisms of inheritance of important traits and thus provide opportunities for "engineering" these traits into new and valuable cultivars. The biochemical basis of resistance to plant pathogens and insects also is little known in these commodities. Significant increases in these disciplines are needed in order to streamline breeding programs, increase quality, and open new markets.

Water Management Research Laboratory

As soils and groundwater resources are increasingly subjected to the dangers of degradation of quality and long term pollution, the urgency for progress in understanding the interactive physical, chemical, and biological processes of flow and transport in the unsaturated zone continues to rise. In 1985, water management was selected by the Joint Council of Food and Agriculture as one of the eight national research priorities. Research in water management is critically needed under irrigated agriculture in arid regions where water availability is greatly restricted during periods of drought as recently experienced. Deep percolation of excess irrigation water carrying nutrients (such as nitrates), pesticides (such as DBCP), and toxic elements (such as selenium) degrade the quality of groundwater and irrigation return flows. Bio-accumulation of toxic elements in ponded return flows has caused toxicosis of wildlife and potentially can enter the human food chain.

Excessive deep percolation results in large part from nonuniform infiltration of irrigation water. To compensate for poor uniformity, growers over irrigate the entire field which lowers their application efficiency and causes excessive runoff and deep percolation. Since the cost of reclamation or disposition of drain flow is proportional to its volume rather than its concentration, irrigation practices which minimize or eliminate return flows need to be critically investigated to determine long term effects on physical, chemical, and biological properties of soil, water, and environmental quality in general and in comparison to existing irrigation practices. Soil physical chemists, microbiologists, physicists, and system analysts are needed to perform model evaluation, environmental monitoring, and analyzes under field and laboratory conditions, and to develop methods for reclaiming and preventing further or future degradation of irrigated agricultural areas and their water resources.

NEED FOR NEW FACILITIES

The current facilities are old (many built in the 1930's), not up to codes, and overcrowded. They are being used for purposes not originally intended. Those scientists in the temporary laboratory trailers (11,000 square feet, 10 years estimated useful life) need to be moved into permanent facilities by 1994. Others are housed in buildings that do not meet seismic and other codes which would require major renovation to conform. None of the buildings are energy efficient; many are temporary structures. As mentioned previously a design criteria study by the A&E firm of Leo A. Daly in 1985 was conducted but has not been acted upon. This study indicated the need for major renovations of the present facilities to be brought up to codes. Still the facilities would be substandard for their present use. Taking into account the importance of the Location programs to western agriculture we recommend that the Fresno Location be appropriated the funds for permanent and modern facilities. Purchase in 1988 of 30 acres immediately south of the Laboratory has provided space for the new facilities that would be minimally disruptive to the research programs.

In the light of the above statements, it becomes obvious that the Fresno Location is in desperate need of new facilities if it is to maintain and increase its program productivity in the 1990's. The planned facilities would integrate all of the existing facilities and staff into one energy-efficient facility. The conceptual study completed by Leo A. Daly in 1985 will provide a basis, after review, for architectural and engineering design of the facility. The study provides spatial arrangements of all components of the laboratory based on program needs, common use areas, and linkage of laboratories having similar requirements, and separation of non-compatible research areas (e.g., insect pathogens vs. insect rearing). Energy efficiency will be maximized and common use areas will be located so as to be readily accessible to those who need them. Heavy equipment (i.e., bioclimatic chambers, centrifuges, chromatographs, etc.) will also be isolated to maximize energy efficiency. Gross floor space for the facility, including a research shop and other out buildings, is estimated to be 117,000 square feet. This will provide for an estimated increase in total staff of 25%.

The planned design also provides for specialized facilities such as growth chambers, insect rearing rooms, and greenhouses. Specialized equipment suites for electron microscopes, tissue culture, and other methodologies requiring isolation are also provided.

Total costs of the facilities is estimated to be $29,012,731 (Exhibit 1) accounting for contingencies, inflation and a midpoint of construction in 1993 (Exhibit 2).

In conclusion, the Fresno Laboratories are strategically located close to major crop production areas, agricultural universities, and industries – a requirement for the type of research conducted at the Location. The two laboratories are conducting research of major significance for the Agency and the nation. New facilities need to be designed and constructed so that the Location can expand and intensify its programs as we progress into the 21st Century.

Summary of Areas for Fresno Location Research Facilities

	ft^2 (net)
COMMON USE AREAS	
Common Use, Research Photography, chromatography, media preparation, fruit handling room, etc.	16,394
Common Use, Administration Offices, library, conference rooms, employee welfare room, publication storage, reception, etc.	4,908
Common Use, Location Support Administrative office, purchasing, office supply storage, copy room, computer room, reception area, etc.	1,208
HORTICULTURAL CROPS RESEARCH LABORATORY	
Postharvest Quality and Genetics Research Unit Plant pathology, plant physiology/biochemistry, horticulture, packaging, tissue and embryo culture, plant and histology and anatomy laboratories, greenhouses, miscellaneous preparation rooms, service areas (farm machinery), cold storage rooms, small conference room, offices, etc.	19,275
Commodity Protection and Quarantine Insect Research Unit Entomology, insect pathology, insect physiology, insect behavior, population ecology and genetics laboratories, insect rearing facilities, instrument rooms, media preparation rooms, sterile transfer rooms, temperature control rooms, seriology laboratory, offices, common use areas	15,520
WATER MANAGEMENT RESEARCH LABORATORY Laboratories for wet chemistry, analytical analysis, experimental chemistry, plant physiology, engineering, electronics, cold storage rooms, plant tissue preparation, phytotron, common use areas, offices	12,327
	69,632
Gross ft^2 (net x 1.6)	111,411
Renovation of greenhouses	5,655
Total Construction Area	117,066

Exhibit 1

New Facilities Budget for Fresno Location (1990)[1/]

Planning, design	$ 3,500,000
Construction (93,000 ft^2 gross) includes lab space, office space, insect rearing facility, research shop, special use areas (i.e., tissue culture), clean air rooms	17,100,000
Demolition of old buildings and clearing of land for return to breeding program/field plots	555,000
Miscellaneous (relocation and reinstallation of equipment from present facilities, etc.)	500,000
Total	21,655,000
Plus 3 years of 4% inflation	24,359,987
Plus 15-25% for facility/program growth	28,012,731
Plus further development of new 30 acres ($500,000)	28,521,731
Specialized facilities and equipment needs: i.e., electron microscopes, analytical equipment, bioclimatic chambers, green houses, phytotrons, safety equipment, isolation rooms, clean air benches, etc.	491,000
Grand Total	$29,012,731

[1/] Assumes midpoint of construction in 1993.

Exhibit 2

New Facilities ARS Fresno Location

STEPS TO BE DONE

	Time Frame
1. Preliminary project criteria	6 months
(a) Review and update design criteria and relationships Leo A. Daly report	
2. A&E firm reviews	2 years
Provides functional layout	
3. A&E firm provides conceptual design	
(a) More details	
(b) Architecture	
(c) HVAC	
(d) Electrical	
(e) Plumbing	
(f) Etc.	
4. Environmental impact statement may be required	
(a) Approvals by City of Fresno	
(b) Approvals by State of California	
5. Design through final	
(a) Details	
(b) Layouts	
(c) Casework	
(d) Etc.	
6. Advertising for construction	3-4 months
7. General counsel reviews - construction clauses	

STATEMENT SUBMITTED TO THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES APPROPRIATIONS COMMITTEE OF THE UNITED STATES HOUSE OF REPRESENTATIVES

by

Joseph Carter

President

Massachusetts Biotechnology Research Institute

March 28, 1990

INTRODUCTION

The Commonwealth of Massachusetts and the State of Oregon have laid the foundations for a model interstate partnership in the field of biotechnology. This unique effort will build upon the respective strengths of the two states to enhance the development of the biotechnology industry nationwide. The partnership will focus on two main areas the application of recombinant DNA technology to plant sciences and the development of strategies to improve the efficiency of small and medium-sized biotechnology companies, especially through shared facilities.

Both Oregon and Massachusetts have research centers with worldwide reputations. Oregon's three research institutions with programs in the plant sciences, Oregon State University, the University of Oregon, and the Oregon Graduate Institute for Science and Technology, recently have joined forces to pursue cooperative efforts in molecular plant engineering and bioprocessing.

These programs, combined with Oregon's abundant supply of natural resources and natural resource industries, provide a strong base for the application of biotechnology to agriculture, forestry, and the food industries. To build on this base, Oregon needs to develop regular mechanisms for taking the products of innovation to the marketplace. Massachusetts, through the public/private consortium known as the Massachusetts Biotechnology Research Institute (MBRI), has a highly successful record in this area. The MBRI continues to evolve new strategies for nurturing biotechnology companies at the earliest stages of development.

PROPOSAL

Purpose In this proposal, the Oregon/Massachusetts Biotechnology Partnership is seeking federal support for the second year of a five-year research and development program.

The overall goals of the program and the partnership are:

- To expand basic and applied research in plant genetic engineering and bioprocessing;
- To enhance the commercial exploitation of innovations in biotechnology; and
- To foster education and training programs to support the development of diverse biotechnology industries.

The expected outcome is a working partnership serving essential research and economic development needs for the Northeast and Northwest regions of the United States and as a model for other multi-regional efforts to respond to the biotechnology initiatives of our major international competitors.

Results of the First Year. Grant funds provided to the Partnership in the first year of the partnership are being used to accomplish the following joint tasks:

- Establish effective working relationships between key organizations and individuals in the two states;

- Complete detailed inventories of biotechnology resources and needs in Oregon and Massachusetts to identify potential areas of collaboration;

- Support faculty research productivity in biotechnology;

- Plan a series of conferences addressing specific topics in biotechnology that will promote the transfer of knowledge and experience from one state to the other; and

- Carry out the first conference in the series, "Opportunities in Plant Molecular Biology: Plant Productivity, Plant Stress, and Biomass Conversion/Biodegradation."

- The Massachusetts portion will help support the development of college-level education and training programs conducted through the MBRI

Innovation Center and the implementation of an industry-focused Bioprocessing Resource Center.

- In Oregon, the funds will be used to support faculty research and educational efforts in basic plant molecular biology and bioconversion and to strengthen the biotechnology infrastructure in the state.

Funding for the Second Year. Massachusetts and Oregon have committed a total of $5 million for biotechnology research and development projects to be carried out under the umbrella of the partnership during the second year. Because of the national importance of this effort, the two states are seeking an equal $5 million level of funding from the U.S. Department of Agriculture.

An additional $5 million in federal funding for the partnership (matched by Partnership expenditures) will be sought in each of the next three years.

The partners anticipate that at the end of the fifth year, the partnership will be self-sustaining through a combination of state support, industrial research contracts and peer-reviewed grants and contracts.

Administration. Overall responsibility for governing the partnership rests with an Oregon/Massachusetts Biotechnology Partnership Steering Committee. The Steering Committee will have an equal number of members from each state and will appoint appropriate advisory committees to deal with each of the three partnership goals, thereby ensuring participation of key groups and institutions in both states.

Operational responsibility for activities of the Partnership rests with the staffs of the MCEC and the Oregon Science Council. Direct management of specific projects and tasks will be the responsibility of each partner in a manner consistent with its intergovernmental, industry, and academic relationships and within guidelines associated with agreements between the Cooperative State Research Service and Oregon State University's Agricultural Experiment Station.

Funds for the interstate partnership will be held by Oregon State University's Agricultural Experiment Station. The funds will be distributed by the University to participating institutions in both states as sub-contracts for approved activities. All federal grant reporting requirements will be met by the University.

DESCRIPTION OF ACTIVITIES

Massachusetts. Funding for the Massachusetts component of the interstate partnership will be used primarily for the nonprofit elements of the Massachusetts Bioprocessing Research Institute Innovation Center, including the pilot Bioprocessing Resource Center and the versatile conference and educational facility. These will occupy 12,000 square feet of Biotech III in the Massachusetts Biotechnology Research Park.

The Massachusetts experience indicates that areas with a rapidly growing biotechnology industry--including small and medium-sized companies with limited resources--require some form of shared bioprocessing facility. Such facilities must provide equipment and specialized services in an industry-

tailored, proprietary-controlled environment. There also is an enormous need for personnel trained in biotechnology manufacturing operations. Because of the lack of equipment and facilities at the university level, many graduates entering industry possess theoretical understanding of bioprocessing but lack practical, hands-on experience.

To meet the needs of businesses and universities in Massachusetts and the New England region, MBRI has begun construction of a Bioprocessing Resource Center Pilot Plant. This plant will be designed to support scale-up of microbial fermentation, tissue culture growth, and product separation and purification. Plant operations will be documented in accordance with Good Manufacturing Practice (GMP) guidelines established the U.S. Food and Drug Administration for the production of human therapeutic products.

Anticipated users of the facility include CBI portfolio companies, such as Alpha-Beta Technology Inc., and EcoScience Laboratories, Inc. In the past, these companies have had to use bioprocessing services as far away as Illinois and Texas. Also, five independent biotechnology firms in Massachusetts have expressed interest in a pilot production plant. One of these firms is the developer of a number of proprietary technologies for agricultural applications of genetic engineering, including the genetic modification of rhizobia to increase nitrogen fixation in legume plants (particularly alfalfa and soybeans).

The major items of equipment required for the Bioprocessing Resource Center include microbial fermenters for scale-up of fermentation and production (three units with interchangeable 1.5 and 5-liter flasks, two 15-

liter systems, an 80-liter system, and a 500-liter system), tissue culture bioreactors for plant and mammalian cells (three 1.5 liter systems, two 15-liter systems, and a 60-liter airlift bioreactor), and a flexible system for product separation and purification. Planners have suggested that the Bioprocessing Center also should offer the following service units to improve the speed and quality of research: a centralized hybridoma facility; a chemistry consultation center with expertise and equipment to purify, synthesize, and sequence proteins and DNA; a biocomputing center; a cell-sorting facility; a mass spectrometry facility; an NMR facility; and an electron microscopy facility.

Expected funding sources include state funds, industrial research contracts, and peer-reviewed grants and contracts, as well as funds from the federal government.

Oregon. Funding for the Oregon component of the interstate partnership will be invested in the Oregon Plant Biotechnology and Bioprocess Technology Initiative.

Natural resources are the heart of Oregon's economy. Agriculture and forestry contribute over $5 billion annually to Oregon's economy. With population growth pressing the limits of natural resource production areas and with global demand for Oregon products, Oregon must not only diversify its economy, it must find ways to diversify the fibers, fruits, and grains that make up its natural resource base.

Three Oregon research universities have notable strengths in plant biotechnology. Oregon State University has the largest program, focused around the Center for Gene Research and Biotechnology. The Oregon Institute for Science and Technology's concentration is in the area of bioprocessing, including biomass conversion.

The University of Oregon's strength lies in the area of plant molecular biology, including plant gene structure and regulation.

The three research institutions will coordinate their efforts on behalf of Oregon's natural resource base with the Governor's Science Council and agriculture/natural resource industry representatives through the Plant Biotechnology and Bioprocess Technology Initiative.

Among the research targets of particular relevance to Oregon's natural resource base are:

- Development of efficient means to directly transfer genes into economically important crops and trees to increase disease resistance; increase herbicide resistance; improve nutritional, medicinal and flavor value; and increase resistance to defoliating insects.

- Development of expertise in general fermentation and applied biochemistry together with Oregon's access to the Massachusetts Bioprocessing Resource Center, to create an Oregon capacity for large scale culture of biological products--an essential component to any long-term, high volume biotechnology industry and the products of that

industry, including drugs, industrial catalysts, pesticides and structural materials.

- Expansion and application of immunological research to develop vaccines for fish, domestic animals, and humans, new diagnostic tests for animals; animal and plant breeding; and tree development.

- Development of new methods for converting agricultural residues and forest wastes into fuel, chemical and food products.

- Development of new applications of microbial degradation to toxic compounds in the soil and groundwater.

CONCLUSION

Oregon and Massachusetts are confident that this proposal reflects opportunities for a productive partnership. The immediate result will be a project of value to each of the partners in enhancing their efforts in the area of biotechnology. In the long term, the partnership will provide a national model for cooperation, sharing of experience, transfer of information, and development of technology networks across state boundaries.

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March 28, 1990

The Honorable Jamie L. Whitten
Chairman
House Appropriations Subcommittee on
Rural Development, Agriculture and Related Agencies
U.S. House of Representatives
2362 Rayburn House Office Building
Washington, DC 20515

Dear Mr. Whitten:

Please find attached testimony enclosed on behalf of the Council for Agricultural Research, Extension and Teaching (CARET) regarding the FY 1991 agricultural appropriations which affect the agricultural programs of the land-grant universities. This testimony is offered in support of the FY 1991 budget recommendations of the Division of Agriculture of the National Association of State Universities and Land-Grant Colleges (NASULGC). Tables are attached to the testimony which detail those recommendations. I am submitting this testimony for the written record as a CARET delegate from the state of Massachusetts.

We are very grateful, Mr. Whitten, for your dedication to American agriculture and for the continued funding of USDA agricultural research and education programs. These funds are critical to the success our of land-grant university system. We, the users of the land-grant system, appreciate all you have done in the past and are doing again to preserve this unique system of education.

Sincerely,

Dorrie Stearns

Dorrie Stearns
Seven Juniper Circle
Walpole, MA 02081

enclosures
c: Silvio Conte

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TESTIMONY

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT
AGRICULTURE AND RELATED AGENCIES

OF THE

HOUSE APPROPRIATIONS COMMITTEE
U.S. HOUSE OF REPRESENTATIVES

BY

DORRIE STEARNS
MASSACHUSETTS DELEGATE
COUNCIL OF AGRICULTURAL RESEARCH,
EXTENSION AND TEACHING
(CARET)

MARCH 29, 1990

FOR THE WRITTEN RECORD

Mr. Chairman and Members of the Subcommittee, I appreciate this opportunity to offer testimony as a member from Massachusetts of the Council for Agricultural Research, Extension and Teaching (CARET). CARET is a national grassroots organization of lay persons who are served by the land-grant university system. CARET delegates reflect the full spectrum of the agricultural community. We are producers, consumers, homemakers, agribusiness leaders, farm groups, commodity organizations, and local officials. We work closely with our respective land-grant institutions to offer guidance and support for programs in agricultural research, extension and teaching. Serving people is the mission of our land-grant institutions, and CARET is a vital partner in accomplishing that mission. I would like to briefly share with you some of the benefits that I and others in the state of Massachusetts have received from our land-grant university, the University of Massachusetts.

The people of Massachusetts and every other state in this nation are the ultimate beneficiaries of our land-grant university's agricultural research, extension and education programs. This same system operates and provides needed services to citizens of each state. It is through this agricultural system that so many of today's problems are being addressed.

The University of Massachusetts Cooperative Extension helped me and hundreds like myself with the task of starting a new business. Now in turn, I am giving my time back as a volunteer; here indeed is a case of people helping people.

The members of my community have been served recently by the Cooperative Extension when our drinking water, which is provided by wells, became contaminated with cancer-causing toxics which had been dumped into the ground by a local company.

Our town of Walpole has been chosen by the state to be the dumps for sludge which is the waste taken out of Boston Harbor. Not only does this pose a threat to our health and environment but the socio-economic/emotional impact is indescribable. Nobody wants to buy a house here, let alone shop here. The University of Massachusetts is helping us to cope.

The role of the land-grant university is to generate new knowledge through research (to cope with the problems like the ones I have identified here) and to extend that new knowledge to the classroom and to the public through extended education (cooperative extension). The investment in our agricultural system alone is without question. The U.S. food system has assets of over one trillion dollars. It employs almost 20 percent of the U.S. work force and it provides $39 billion per year in exports. An erosion in this component of a nation's system would be very costly. For a number of years state and federal support of research and education to support this food system has not kept pace with its real costs. As a consequence there has indeed been an erosion in the strength of this very important economic and social component of our nation.

Recently the leadership in our land-grant system, along with other important agencies, like the National Academy of Sciences, have focused on what they consider to be the most important issues of our time in the areas of research (natural resources and the environment; nutrition, food quality and health; new products; markets; plant and animal systems) and extension (water quality; nutrition, food safety and health; rural development; sustainable agriculture; youth at risk). In response to a report published last Fall by the National Academy of Science's Board on Agriculture, "Investing in Research", the land-grant community endorses an infusion of new monies into agricultural research programs. An infusion of new monies into such research would provide answers to consumer concerns about food safety, provide new knowledge on resource management to optimize resources such as water quality, increase our international competitiveness by lowering production costs and developing alternative uses of our crops, take a proactive position relative to risks and crises in the food and agriculture system, and assure that top quality scientists and students will focus their attention on the issues of agriculture, food and the environment. History has shown that we can expect a minimum of a 30 percent return on new investments in agricultural research. These are all benefits that will not only help the state of Massachusetts, but will help the nation as a whole. The urgency and importance of the issues addressed in such an initiative is clear. CARET supports any new monies which can be provided to enhance the current agricultural research and education programs.

Several Nationwide Extension Priority Programs have been identified by the land-grant community: water quality; nutrition, health and food safety; rural development; sustainable agriculture; and youth at risk. In addition, Specified Programs for Extension in such areas as Integrated Pest Management are extremely important to the overall goal of helping society cope with these contemporary issues. If an investment in research is made an investment in the education programs that allow the movement of that new knowledge from the research bench to the end user must be made as well.

It is also important to continue to produce well-trained scientists and professionals who can effectively carry out the research and education programs of these institutions. Without a strong nucleus of such individuals we will see an erosion of our research and education programs that we have all worked so hard to put in place. Therefore, the continuation of funding for the Morrill-Nelson Act in higher education for agriculture and food sciences remains a high priority in the recommendations of the NASULGC Division of Agriculture recommendations.

I would like to urge this subcommittee to continue its support for the agricultural research and education programs of the land-grant system. The base programs funding provided by the Hatch Act and the Smith-Lever Act, to name but two, enable my state's land-grant university and the others of the entire land-grant system to conduct the day-to-day activities of research and education which in turn help to provide for a high-quality, low-cost food supply, an informed consumer an an improved quality of life.

Mr. Chairman, CARET appreciates what you and the other members of this subcommittee have done in the past in supporting these important programs. We recognize your contribution to American agriculture. We urge you to continue that support in Fiscal Year 1991 so that the benefits of these programs may continue to be received by the American public.

Thank you for the opportunity to present this testimony.

TABLE I: SUMMARY OF FUNDING RECOMMENDATIONS FOR RESEARCH, EXTENSION AND HIGHER EDUCATION
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
Base Programs			
Research	202,756	197,689	214,921
Extension	265,054	270,627	282,708
Higher Education	2,810	0	2,810
Special Programs			
Research	123,554	132,204	224,441**
Extension	104,126	75,049	133,740
Higher Education	11,111	17,000	21,000
TOTAL	709,411	692,569	879,620

* GRH refers to the Gramm-Rudman-Hollings balanced-budget law.

** Includes $107.5 million of new funding for the National Research Initiative (NRI) for Agriculture, Food and Environment.

TABLE II: RESEARCH FUNDS
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
BASE PROGRAMS			
Hatch Act Base Funds	155,058	158,545	164,361
McIntire-Stennis Act	17,279	12,975	18,316
Evans-Allen Program (1890)	25,012	26,169	26,513
Animal Health (Section 1433)	5,407	0	5,731
TOTAL BASE PROGRAMS, RESEARCH	202,756	197,689	214,921
RESEARCH GRANTS P.L. 89-106			
Competitive Grants (Sec.2b)			
Plant Science	7,751	a	a
Human Nutrition	1,481	a	a
Animal Science	4,937	a	a
Biotechnology	18,775	a	a
Basic Pest Sciences	1,975	a	a
Stratospheric Ozone/Global Change	3,653	a	a
Forestry	3,949	a	a
NRI-Nat'l Resources & Environment	0	15,000	30,000
NRI-Nutrition, Food Quality, and Health	0	5,000	19,000
NRI- Plant Systems	0	50,000	50,000
NRI- Animal Systems	0	30,000[b]	30,000
NRI-Engineering Processes and Value-Added Products	0	0	11,000
NRI-Markets, Trade, and Rural Revitalization	0	0	10,000
Total Competitive Grants	42,521	100,000	150,000

TABLE II: RESEARCH FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
SPECIAL GRANTS (SEC. 2(c))			
National Programs			
Acid Precipitation	653	0	692
Animal Health	5,633	0	a
Aquaculture Research General	563	0	a
Integrated Pest Management	2,903	4,000	4,000
Minor Use Animal Drugs	226	329	329
Biological Impact Assessment	123	300	300
Pesticide Clearance	1,975	3,000	3,000
Pesticide Impact Assessment	2,437	2,968	2,968
Rural Development Centers	494	0	524
Tropical and Subtropical Agriculture	3,299	0	3,299
Water Quality and Management	6,615	10,000	10,000
Global Change	0	5,000	5,000
Total Special Grants (2c)	24,921	25,597	30,112
Special Problem Grants[c]	30,907	0	30,907
TOTAL RESEARCH GRANTS	98,349	125,597	211,019

TABLE II. RESEARCH FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
OTHER RESEARCH PROGRAMS			
Rangeland (P.L. 95-113)[a]	469	0	[a]
Aquaculture Centers (P.L. 95-113)[d]	3,703	0	3,703
Supplemental & Alternative Crops (P.L. 95-113)	321	918	918
International Trade Development Centers[d]	3,112	0	3,112
Critical Materials (P.L. 98-284)[a]	5,300	0	0
Low Input Sustainable Agriculture (P.L. 99-198)	4,394	4,450	4,450
TOTAL OTHER RESEARCH PROGRAMS	17,299	5,368	12,183
Federal Administration			
Direct	13,336	12,239	12,239
1890 Capacity Building Grants[f]	(5,430)	(11,000)	(11,000)
NET FEDERAL ADMINISTRATION	7,906	1,239	1,239
TOTAL RESEARCH	326,310	329,893	439,362

[a]Incorporated within the National Initiative for Research on Agriculture, Food and the Environment.

[b]Includes funds transferred from Special Grants for Animal Health. Animal Health formula funds are continued as a separate item.

[c]Some site specific 2c grants are included in the total for Special Problem Grants which are established to address acute problems in specific states.

[d]Any funding increases should be awarded competitively.

[e]Some items were moved to Supplemental and Alternative crops for FY 1991.

[f]See Higher Education, Table IV.

TABLE III- EXTENSION FUNDS
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
BASE PROGRAMS			
Smith-Lever 3b and 3c Base Programs	242,272	246,535	256,808
D.C. Extension	946	1,000	1,000
1890 Colleges & Tuskegee U.	21,836	23,092	24,900
TOTAL BASE PROGRAMS, EXTENSION	265,054	270,627	282,708
NATIONAL EXTENSION INITIATIVES			
Water Quality & Management	5,211	15,500	15,500
Improving Nutrition, Diet & Health			
Food Safety and Quality	0	2,000	5,000
Revitalizing Rural America	0	0	5,000
Competitiveness of American Agriculture			
Sustainable Agriculture	(4,450)[a]	0	2,500[b]
Youth-at-Risk	0	10,000	10,000
TOTAL NATIONAL EXTENSION INITIATIVES	5,211	27,500	38,000

TABLE III: EXTENSION FUNDS (continued)
(Thousands of dollars)

	FY 90 Appropriations CRH	FY 91 Executive Request	FY 91 NASULOC Recommendations
SPECIFIED PROGRAMS[c]			
Expanded Food and Nutr. Ed. Program (EFNEP)	58,197	21,600	58,635
Rural Development Centers	943	0	950
Integrated Pest Management	7,110	7,164	8,250
Pesticide Impact Assessment	2,561	3,580	3,580
Financial Management	1,416	0	0
Urban Gardening	3,474	0	3,500
Farm Safety	963	0	970
Pacific Rim Program	645	0	650
1890 Extension Facilities	9,437	9,508	9,508
Renewable Resources Extension Act	2,744	0	4,000
Farmer Assistance Grants	3,325	0	0
TOTAL SPECIFIED PROGRAMS	90,815	41,852	90,043
Federal Administration, Direct	8,745	5,697	6,347
Pacific Rim Program	(645)[d]	0	(650)[d]
NET FEDERAL ADMINISTRATION	8,100	5,697	5,697
TOTAL EXTENSION	369,180	345,676	416,448

[a]See Low Input Sustainable Agriculture under Research in Table II

[b]New program for Extension only.

[c]Established from time to time to address specific acute problems

[d]See explanation under Specified Programs

TABLE IV HIGHER EDUCATION FUNDS
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
BASE PROGRAM			
Morrill-Nelson Act	2,810	0	2,810
OTHER PROGRAMS			
Graduate Training Fellowships	2,816	4,000	5,000
Institution Challenge Grants	987	2,000	3,000
1890 Strengthening Grants[a]	1,878	0	0
1890 Capacity Building Grants[b]	5,430	11,000	11,000
Post Doctoral Fellowships	0	0	2,000
Total Other Programs	11,111	17,000	21,000
TOTAL HIGHER EDUCATION	13,921	17,000	23,810

[a]Included in 1890 Capacity Building Grants in 1991 request.

[b]Funded under Federal Administration, Research.

TABLE V: INTERNATIONAL AGRICULTURE PROGRAMS
(Thousands of dollars)

	FY 90 Appropriations GRH	FY 91 Executive Request	FY 91 NASULGC Recommendations
INTERNATIONAL SCIENTIFIC AND TECHNICAL COOPERATION			
Scientific and Technical Exchanges	1,591	1,816	1,900
Administration of International Research	1,415	1,433	1,700
International Organization Affairs	604	612	612
Total	3,610	3,861	4,212
INTERNATIONAL AGRICULTURAL DEVELOPMENT			
Agribusiness Promotion	301	305	305
Institutional Cooperation (ISEC)	99	100	200
PL 480 Support	64	65	65
Cochran Middle Income Fellowship Program	1,473	0	2,000
Total	1,937	470	2,570
OPERATION FAST	494	500	500
FOREIGN CURRENCY RESEARCH PROGRAM	875	0	8,000
Total OICD	6,916	4,831	15,282

NATIONAL RURAL HOUSING COALITION

122 C Street, N.W., Suite 875, Washington, D.C. 20001 • phone (202) 393-5229

Mr. Chairman, my name is Robert A. Rapoza and I am Executive Secretary of the National Rural Housing Coalition. NRHC lobbies on behalf of low income housing and rural development needs. We are pleased to submit this statement for the record.

We urge the Committee to reject the President's Fiscal Year 1991 budget for Farmers Home Administration (FmHA). It calls for deep reductions in federal rural housing programs for the poor. The Administration has proposed more than a 50% cut in direct loans for low income home ownership and for a new subsidized loan guarantee program. There is substantial evidence that this approach will not work.

NRHC Recommendations

We strongly support an increase in rural housing programs in FY '91. The appropriation for rural housing increased by about $100 million in FY '90. We believe that $500 million should be added in FY '91.

We also support an increase in rural water sewer loan and grant funding in the coming fiscal year. As of December 4, 1989 the backlog of qualified pre-applications and applications for this assistance totaled over $1.4 billion. We urge the Committee to increase water-sewer funding by $300 million. Of that amount, $200 million should go to grants which make projects affordable to low income communities.

The Fiscal Year 1991 Proposal

The rural housing budget includes the following:

* Direct lending for rural housing is slashed from $1.906 billion to $1.027 billion.

* The emphasis of the rural housing lending programs for home ownership is shifted toward moderate income households. Section 502 direct loans for low and very low income households are cut from $1.31 billion to $609 million. Two new loan guarantee programs are proposed for home ownership: a subsidized program for low income, proposed for $297 million; and an un-subsidized program for above moderate income individuals proposed for $297 million. As a result, the direct loans made to low income households will fall from about 25,000 to about 10,700.

* Section 515 rural rental housing loans are cut from $571.8 million to $391 million and rural rental assistance is reduced from $297.3 million to $258 million. Unit production will fall from 15,927 to 10,900.

* Self help housing grants and site loans are eliminated.

The Administration Plan - It Will Not Work for Low Income Households

Home Ownership

If approved, the FY '91 budget will dramatically reduce single family housing development for low income households. The Administration not only cuts the direct loan level, it also shifts authority for single family loans to loan guarantees and to moderate income households, rather than low income households.

Loan making will become more complex as many low income borrowers will be required to obtain a loan from a conventional lender. This will be used with an FmHA guarantee and an interest credit subsidy to finance home ownership.

To the detriment of poor households, interest subsidies will be limited to an average of 5 points, which is less than current law. This will further shift the emphasis of what is now a low income program to higher income households.

Under the guarantee program, an interest subsidy will be taken on the cost of private sector mortgage lending. This rate is not only higher than the government rate but it is also greater than that of most metropolitan area banks. The budget, therefore, proposes a limitation on the amount of subsidy that is available because it costs more to subsidize a bank loan than to subsidize a government loan. As a result, the Section 502 program will no longer serve very low income families as required by law.

The Administration relies on local financial institutions to provide mortgage credit. There is little evidence that rural financial institutions are willing or able to pick up the slack. For example:

* The S&L crisis has had a significant impact on rural institutions. According to a recent USDA Economic Research Service report, the rate of increase of rural thrift insolvency is nearly twice that of urban areas. There has been a 20% drop in the number of solvent thrifts operating in rural areas between 1983 and 1987, and energy belt states have been the hardest hit. The number of rural counties without an S&L increased from 502 to 574 over the last five years.

* There is little evidence that rural financial institutions provide uniform terms and conditions. For example, a recent draft report completed for the Center for Community Change found that a bank in South Texas offered a 5 year mortgage loan with a 30% down payment; until 1989 no other financial institution in the area financed private mortgages.

* Across the country rural residents typically pay one-half percent more in interest charges for mortgage credit than urban residents. Most rural residents must repay in 21 years, rather than the 29 year average repayment term of urban residents. Both these factors mean that monthly payments on a $50,000 loan are roughly 15% higher in rural areas than in urban communities.

In recent years, FmHA has shifted its agricultural lending from direct to guaranteed loans. The results have not been impressive. For example:

* Local financial institutions have shown little interest in guarantees. While the total authorization for farm operating and ownership guarantees increased from $1.75 million in 1983 to $3.3 billion in 1988, obligations never exceeded $1.6 billion. During the same period, FmHA obligated all direct loan funds.

* Losses have been high. Since 1984 losses on guaranteed loans have increased at a faster rate than guaranteed loan activity. FmHA estimates that losses could exceed $115 million in FY '89 alone. GAO has strongly criticized FmHA's performance in managing the guarantee program.

* Existing FmHA borrowers have not been helped by guarantees. According to GAO, the increase in direct loan obligations was not a result of direct loan borrowers receiving guarantees. Rather, the increase occurred principally because private lenders obtained credit for their existing commercial customers who were experiencing financial difficulties.

Rural financial institutions are not in a position to take on a new guarantee program. The precarious nature of the thrift industry, the lack of uniformity in lending practices, and the high cost of credit make the implementation of a uniform guarantee program for low income people unlikely.

Beyond this, there is little evidence to indicate that FmHA has the capacity to adequately and efficiently administer a new guarantee program. Losses in a comparable farm lending program have been high and it is clear that lenders have used the program simply to shift borrowers to a government guarantee, thereby covering their mistakes. Borrowers who previously participated in FmHA programs, and who by definition have limited resources, were unable to obtain a private sector loan to be guaranteed.

There is great demand for Section 502 loans. In FY '89 close to 140,000 households submitted applications; only 48,766 or 35% of the households submitting applications were approved.

Rural Rental Housing

The budget proposes a one-third reduction in rural rental housing funds. This cut flies in the face of substantial evidence that there is a severe and growing shortage of affordable rural rental housing and a great demand for FmHA rural rental housing and rental assistance programs.

Important facts:

* In 1970, there were approximately 500,000 more low rent units in small towns and rural areas than there were renter households.

* By 1985, there were 500,000 fewer low rent units in non-metro areas than there were renter households. Beyond this, there were 2.5 million low income renter households, but only 2 million low rent units. And, of the 2 million units available, only 1.3 million were occupied by low income households.

* As of January 1990, FmHA had on-hand eligible pre-applications and applications for rural rental housing totalling over $2 billion or close to four times the FY '90 appropriation. In order for a pre-application to be considered eligible, the market or need for the project must be proven.

Rural Housing Need

According to the National Housing Task Force, some 4.3 million low income households in non-metropolitan areas currently experience housing problems. Of this number, close to two million have significant problems with the units themselves, including a lack of plumbing.

Low paying jobs and the seasonal nature of work, coupled with the downturn in natural resource based economies important to rural America, have prevented our small towns from participating in the recent improvement in the nation's economy. Non-metropolitan areas now have a higher rate of poverty and unemployment than our big cities.

Funding History

Rural housing programs were increased by about 5% in FY '90, the first increase in funding since 1981. Between 1982 and 1989, rural housing programs were reduced by more than 50%.

The bulk of FmHA funding is in the form of subsidized loans. Some $1.31 billion is provided for single family loans under Section 502. Close to 90% of 502 loans are in rural areas with populations of less than 10,000. The average annual income of Section 502 is about $13,500 and the law requires that 40% of Section 502 mortgage aid go to very low income households (50% of median).

Some $570 million is appropriated for FY '90 for the Section 515 loan program. Section 515 provides reduced interest loans to public and private sponsors to finance the acquisition, construction and repair of multi-family housing for low income and elderly households. The average annual income of Section 515 tenants is about $8,000. About 40% of all Section 515 units are occupied by elderly households.

Virtually all FmHA housing assistance is limited to low income households -- those with incomes at or below 80% of the area median income. In FY '89 close to two-thirds of FmHA assistance went to very low income households -- those with incomes which do not exceed 50% of the median income.

Despite serving poor households, the FmHA program has been remarkably successful in protecting the government's interest. The default rate on rural housing loan programs is about 1%. The 90 day delinquency rate in rural housing loans is 1.5%. Over the years, some 2 million economically disadvantaged families have gained decent housing through FmHA housing assistance.

Thank you for the opportunity to submit this statement for the record.

TESTIMONY

by

HARVEY BOLLINGER, EXECUTIVE DIRECTOR
REDARK DEVELOPMENT AUTHORITY

before

THE HOUSE APPROPRIATIONS SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

HONORABLE JAMIE C. WHITTEN - CHAIRMAN
CONGRESSMAN FROM MISSISSIPPI

WASHINGTON, D. C.
28 MARCH 1990

REDARK DEVELOPMENT AUTHORITY

Mr. Chairman and Committee members on behalf of the 19-member Board of Trustees of RedArk I want to express our appreciation for this opportunity to provide this testimony to this committee. We consider it an honor and a privilege to testify before this committee because we feel that without a strong multi-purpose national rural development program, many of the other important aspects of our country's future, are really being built on a very unstable foundation. We also consider it a responsibility to work with you and the committee.

The RedArk Development Authority (RedArk) is a public trust established under the laws of the State of Oklahoma for a 21-county area of East Central and Southeast Oklahoma. The name RedArk is derived from the fact that the area lies immediately between two major water resources, the Red and the Arkansas Rivers. The purpose of RedArk is to undertake the maximum potential development of the area's water and natural resources with the objective of obtaining the maximum potential economic and employment benefits for the people of that area.

East Central and Southeastern Oklahoma is rich in water and natural resources, but this area of Oklahoma has lagged far behind the State and the Nation in capitalizing the untapped potential of its natural resource base. The economic and job development potential of these resources has not as yet been of significant benefit to the people of the area.

When one looks at the RedArk area and the poor economic and employment conditions that exist, and yet realizes the area is rich in water and natural resources, one has to come to the conclusion that there's no justifiable reason for the situation to exist. It is a realization of this untapped potential that makes it not only a privilege for us to testify about rural development in this area, but it actually becomes a mandate to do so.

To achieve its principal purpose, RedArk has initiated a comprehensive, multi-purpose, natural resource and rural development program. This program includes hydropower development, water supply, recreation, agriculture, minerals, forestry, and industrial development.

Also incorporated in the RedArk area are two existing Resource, Conservation and Development areas; the Ouachita Mountains RC&D and the Fun Country RC&D, and one pending area Cross Timbers RC&D. Both authorized RC&D areas have been engaged in traditional Soil Conservation Service (SCS) program measures of erosion and sediment control, flood control, and water conservation.

As you know Mr. Chairman, in 1981 Congress greatly expanded the authority of the Secretary of Agriculture "to encourage and improve the capability of State and local units of government and local nonprofit organizations in rural areas to plan, develop, and carry out programs for resource conservation and development."1

This legislation authorized the Secretary to provide technical and financial assistance to units of local government "to assist in developing and implementing an area plan for that area."2 Congress provided that the area plans should include, in addition to a land conservation element and a water management element, a "community development element" providing for "development of natural resources based industries,...development of aquaculture, development of adequate rural water and waste disposal systems, improvement of recreation facilities,...and satisfaction of essential transportation and communication needs..."3

"Financial assistance" was defined by the act as "Federal contracts, grants, or loans."4 Likewise, technical assistance was defined as "any service provided by personnel of the Department of Agriculture or **non Federal personnel working through the Department of Agriculture**, including, but not limited to, inventorying, evaluating, planning, designing, supervising, laying out and inspecting works of improvement, and the providing of maps, reports and other documents associated with the services provided."5

REDARK RC&D ASSOCIATED MEASURES
Natural Resources and Rural Development Program

Mr. Chairman, last year this committee provided funds in the FY90 Rural Development Agriculture and Related Agencies Appropriations Bill for the continuation of the USDA-RC&D program. RedArk was able to continue to carry out certain resource development projects and associated measures through the USDA-RC&D Program.

RedArk's program involves three major phases. The three phases are project development, project implementation, and project operation. Each phase is discussed in the following paragraphs and specific projects are then presented.

1 16 USC: 3451: P.L. 97-98, title XV, Sec. 1528: 95 Stat. 1337
2 16 USC: 3455: P.L. 97-98, title XV, Sec. 1532: 95 Stat. 1339
3 16 USC: 3452: P.L. 97-98, title XV, Sec. 1529: 95 Stat. 1337
4 ibid.
5 ibid.

Phase I Project Development

During this phase individual projects/measure are identified. This effort utilizes information, data and statistics from previous and on-going resource assessments and strategy development studies and documents prepared by RedArk. In addition it also relies on measures development plans established for each of the RC&D areas. The identification of potential projects/measure also relies on coordination with Congressman Watkins; USDA-SCS; TVA; OSU; Oklahoma Conservation Commission; Area RC&D Councils and Coordinators; Substate Planning Districts; numerous other Federal, State, and Local agencies, organizations, and leaders; and private sector foundations, companies and individuals.

All projects/ measure identified during Phase I process are described in more detail on individual programming sheets. Each sheet includes the project/measure title, the objective, success indicator, and a brief description. Since this is an on-going process, such sheets are submitted to the State Office of USDA-SCS in Stillwater, Oklahoma as they became available.

Once potential projects have been identified efforts of this phase concentrate on the assessment of the project's potential, identification of barriers to its development strategies and determination of methods for its financing.

During the Phase I efforts projects/measure are evaluated, appropriate implementating entities identified, and methods of financing developed. For those projects/measure which it is determined to be desirable and feasible for RedArk to be the implementing and/or operating entity methods of financing are identified.

For purposes of this program, two financial sources are discussed. One source of implementation funds will be that portion of the RC&D grant funds budgeted for implementation activities during the respective fiscal year. All other sources of funding will simply be referred to as "alternative sources" and will include numerous sources or combination of sources of funds . Each project/measure to be implemented by RedArk may be entirely funded by RC&D grant funds, entirely by alternative sources, or a combination of both.

Phase II - Project Implementation

This Phase of the program involves the actual construction, acquisition and/or modification of facilities for which RedArk is to be the operating entity. RedArk will either contract out the entire project or act as the general contractor and subcontract out small pieces of the project.

A detailed description and budget for each implementation project/measure which relies on RC&D grant funds is submitted for prior approval. Phase II implementation proposals are submitted to the USDA-SCS State Conservationist, State Office Stillwater, Oklahoma.

Phase III - Project Operation

Although it is not the intent of this program or the Board of Trustees of RedArk that the operation of such project/measures would rely on RC&D grant funds or other external funds for their long term operation, it may be necessary for initial and short term operating revenue deficits to be supplied from such RC&D grant funds. This activity is referred to as "jump starting" a project. Phase III is the operating phase of the program.

Project/Measure Description

RedArk utilized the funds it received through the USDA-RC&D Program for FY 90 to primarily continue its efforts to establish and expand horticulture and aquaculture industries.

RedArk dba Three Rivers Produce (TRP) entered into a 6 month test with the Oklahoma State Department of Corrections (DOC) to provide all the fruit and vegetables to six (6) of the state correction facilities. The test resulted in a savings to DOC of $13.08 per inmate per year. This is with Three Rivers applying a flat 12 per unit handling fee.

The DOC has agreed to expand the agreement with TRP to include eleven (11) correction facilities. This will involve an inmate population of 5,829. The anticipated annual savings to the DOC for the eleven is approximately $76,200.

The sales to the DOC provide TRP with a year-round steady market. We are working with the USDA-ARS South Central Agriculture Research Laboratory to identify vegetables used by the DOC which are not currently being produced in the area but have the potential of being produced here. While potatoes are one such crop. Earlier this month TRP working with two farmers in McCurtain County Oklahoma planted twenty acres of white potatoes.

The agreement between TRP and DOC accomplishes two objectives, it provides an opportunity for a profitable market for the area producer and at the same time saves the DOC money and provides TRP with a revenue flow. It is a win-win situation.

RedArk dba AquaFarms Catfish continues to build an aquaculture industry in Oklahoma. When RedArk opened AquaFarms Catfish (Oklahoma's first major processing and marketing plant for grain-fed, farm raised Catfish) on August 3, 1987, Oklahoma was importing 90 percent of the catfish consumed in the State. Today Oklahoma is ranked sixth in the nation in dollars obtained from catfish production. On January 1, 1990 the National Agricultural Statistics Service recorded 95 catfish operations in Oklahoma utilizing 1500 acres of water and having sales of $966,000 during 1989. AFC currently has 42 employees and is processing 30,000 pounds per week.

RedArk continues to provide the staff and office facilities for the Catfish Farmers of Oklahoma (CFO) organization. The CFO has a membership of 350. The 5th annual Oklahoma Catfish Conference and Tradeshow sponsored by CFO was held in February 90. There were 290 persons in attendance.

Request

Mr. Chairman, again thank you for your past support of the USDA-RC&D Program and our effort. On behalf of the RedArk Board of Trustees and Staff, I request that this committee provide funding at a level at least equal to that of last year in the FY 91 Appropriations Bill to continue these efforts.

RURAL ENTERPRISES, INC.
TESTIMONY BEFORE
THE HOUSE APPROPRIATIONS SUBCOMMITTEE
ON RURAL DEVELOPMENT AND AGRICULTURE

MARCH 28, 1990

Witness:

Tom Seth Smith, Executive Director
Rural Enterprises, Inc.
Durant, Oklahoma

SUMMARY REQUEST

Rural Enterprises, Inc. requests continuance of the U.S.D.A. funding beyond the current fiscal year to continue ongoing efforts of rural development with emphasis of off-farm job creation through:

* Innovation Evaluation
* Evaluation of New Products and Processes
* Incubation of Business Start-Ups
* Financial Services Assistance/Venture Capital Packaging
* Industry Recruitment and Area Marketing
* Technology Transfer

REI has a proven track record of successfully implementing rural development initiatives. Continued U.S.D.A. funding is imperative for future opportunities to be realized and for the positive results to be continued. We respectfully request continuance of this funding level at $430,000 for 1991. We also request the committee's support for continuation of the Mississippi/Oklahoma technology transfer effort at a funding level of $330,000. This will also enable REI and Oklahoma State University to address rural technology needs through its continued cooperative agreement.

Mr. Chairman, as Executive Director of Rural Enterprises, Inc. I express sincere appreciation for the opportunity to address this committee.

Rural Enterprises, Inc. (REI), created in 1981, is a private nonprofit rural innovation corporation. REI headquarters are in Durant, Oklahoma, which is approximately 90 miles north of Dallas, Texas. The overall mission of REI is that of job creation within it's service area. Initiated as a national demonstration model, this practical and innovative approach to economic development is a unique concept which has impact potential for rural development nationwide.

This mission of job creation is carried out by applying a combination of innovative economic development tools consisting of:

* Innovation evaluation, the evaluation of new products and processes for licensing to existing manufacturers,
* Evaluation of new products and processes for establishing them as solvent industries,
* Incubation of businesses through a network of small business incubator facilities,
* Financial services assistance, providing venture capital to needy and qualified businesses,
* Industrial recruitment and marketing of a rural region to new and expanding industries, and
* Technology transfer.

Rural Enterprises has been involved in rural job creation for virtually ten years. During this period it has developed management expertise and a support system to deliver an effective and efficient rural development program. REI works with several federal/state government agencies including the Department of Agriculture, the Oklahoma Cooperative Extension Service, NASA the Oklahoma Department of Commerce, and the Small Business Administration.

In October, 1988, Rural Enterprises, Inc. and the Central Industrial Applications Center (CIAC) merged. The result of this merger is an organization with over 25 years combined experience in technology transfer.

CIAC brings an expanded territory to the REI mission. CIAC's service territory consists of the central states are including North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. An outreach program is in place with a network of affiliates who serve as points of contact in each of these states for REI/CIAC search services. Through CIAC information is available for RE/CIAC search services. Through CIAC information is available from NASA and DoE technical data bases and over 500 commercial data bases.

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Rural Enterprises has had a cooperative relationship with the U.S.D.A. over the past few years. REI has mirrored the desired existence of a rural technology center, as envisioned by Congressman Wes Watkins. Public Law 99-409 enables the creation of such rural technology centers which have as a primary objective the improvement of the economic condition of rural areas by promoting the development through technological innovation and adaptation of existing technology and commercialization. REI is the first and only rural technology transfer center to be funded and established by the Congress under this law.

Also the 1990 rural economic development legislation as proposed by the House in Title 4, Section 402 builds upon Congressman Wes Watkins' original language establishing rural technology centers and giving the Secretary of Agriculture discretion to fund those organizations which meet the language description. It is through this concept that REI has been able to assist many small businesses create vitality needed off-farm jobs. The REI area has made great strides over this . The area has benefited from the location of new industry and the expansion of existing industry. In fact Oklahoma Department of Commerce figures indicate that with only 16% of the state's population, the REI area has seen the creation of 28.9% of all new jobs created in the state over the past four years. The area also has led the state in new private sector investments totaling over $600 million. These jobs and investments are primarily value-added industry diversification jobs.

These jobs have occurred as a result of a positive can do spirit existing within the area by it's leadership and I am proud to say also because of economic development tools our organization has been able to provide complimenting those local communities resources.

Rural Enterprises, Inc. has a history of innovative accomplishments including technology transfer to small businesses and business incubator programs which were in place within REI territory before they became a familiar concept nationwide. It is with continued financial and technical support from U.S.D.A., the survival of these proven concepts and promising new ideas can be insured.

Rural Enterprises is indeed appreciative of this opportunity to provide testimony to this committee and gives thanks to each member for their consideration.

Statement by

Robert L. Thompson
Dean of Agriculture
Purdue University

for the
Subcommittee on Rural Development,
Agriculture, and Related Agencies of
The House Appropriations Committee

March 28, 1990

Mr. Chairman and Members of the Subcommittee, my name is Robert L. Thompson. I am Dean of Agriculture at Purdue University and serve as a member of the Board on Agriculture of the National Research Council. I am here today to testify in support of the national agricultural, food, and environmental research initiative proposed by the Board on Agriculture and for which start-up funding has been proposed in the President's 1991 budget.

This initiative proposes that the Federal government annually invest $500 million in research grants on agricultural, food, and environmental problems. The Board's decision to recommend an investment of this size was not taken lightly. We all recognize the need to reduce the Federal budget deficit. However, the food, agricultural, and natural resource system faces problems of such magnitude that solutions cannot wait. The federal government spent tens of billions of dollars in short term price and income support for farmers in the mid-1980s. What is proposed in this initiative is a much smaller investment in research to solve problems that will determine the long-term competitiveness and sustainability of U.S. agriculture.

The National Association of State Universities and Land Grant Colleges has recommended funding the USDA competitive grants program at $150 million for 1991. This would provide first year funding of this National Research Initiative at a level sufficient to allow inclusion of all six major program areas proposed by the Board on Agriculture. These areas include: plant systems; animal systems; nutrition, food quality and health; natural resources and the environment; engineering, products, and processes; and markets, trade and policy.

I support the Land Grant Association's recommendation and encourage the subcommittee to provide funding at the $150 million level.

Funding for this program would attract some of the best minds in the country to help in solving the pressing problems of the agricultural, food, and natural resource system. This is important for a number of reasons. During the 1990s the U.S. agricultural and food system will confront challenges from many sides. There is great concern about the impact of present production systems on the quality of our water and the environment. The safety of our food supply and the relationships between diet and health are frequently questioned. Both farmers and state governments are concerned about the viability of rural communities and the need to diversify their economic base. Producers of crops in surplus want new uses for their commodities. Farmers are concerned that we have lost our cost competitiveness in international markets. They ask why so little of our agricultural exports are in value-added form.

Basic research breakthroughs in the biological sciences and in engineering over the past two decades provide tremendous opportunities to solve these problems. Shrinking Federal investments in agricultural, food, and natural resources research, however, make it nearly impossible to capitalize on these tremendous opportunities and to apply breakthroughs in science and engineering to these important agricultural and natural resource problems.

The federal-state partnership in agricultural, food, and natural resources research has been one of the great success stories of the past century. The rate of return on research investments has ranged from 45 to 130 percent. Productivity in U.S. agriculture grew faster than in other American industries and much faster than agricultural production in other countries throughout most of the 20th century. U.S. agricultural productivity is envied by other sectors of the U.S. economy. Our agricultural research system has been emulated by many other countries. Unfortunately, we have grown complacent over the past 30 years. Real federal investment in agricultural, food, and natural resources research has stagnated. Of greater concern, however, is the fact that we are now being out-invested by other countries. Much of our comparative advantage in world markets is based on technological superiority. Technological obsolescence can drag down competitiveness in agriculture, just as in other sectors of the American economy.

A healthy and productive agricultural research establishment requires two critical components. First, an infrastructure consisting of facilities, laboratories, equipment, farms, and research scientists must be in place and well-maintained. Federal formula funds and state appropriations jointly provide this basic agricultural, food, and natural resources research infrastructure. Second, funds must be provided to support the costs of the supplies, technicians, students, etc. needed to make scientists productive. As real Federal appropriations, especially formula funds, have failed to keep up with inflation, support of the infrastructure has been shifting to state and university sources. This has forced states to reduce funds for direct support of research projects.

Competitive research grants provide the funds that make scientists productive. These grants focus scientist's attention on high priority national research issues. The best minds in the country can be attracted to the priority problems of concern to agriculture--whether those minds are in land-grant universities, federal laboratories, or private universities. Competitive grants also assure that research on national issues is conducted efficiently and without duplication of efforts. The proposal solicitation and review process not only allows selection of the best science, it serves a coordination role that helps assure complementarity among projects on national priorities and assures that scientists in different institutions do not duplicate each other's efforts.

USDA's current competitive grants for research on agricultural, food, and natural resources problems are inadequate to meet needs. Grants are too small, for too short a time, and simply not available in several critical research areas. As a result, we fail to attract talent from the broad range of scientific disciplines that we need to solve problems of agriculture, food, and natural resources. We also send signals to young people that discourage them from pursuing agricultural research careers.

In his 1991 Budget the President has proposed a significant increase in agricultural research grants. This is an important first step. Increased Federal investments in agricultural, food, and natural resources research are urgently needed. The problems are national in scope. While many states have increased appropriations to help support the research infrastructure and to solve important state problems, they need help in financing the research needed to solve national problems. I urge the members of this Subcommittee and the Congress to build upon this first step and to work to achieve the agricultural research funding levels proposed by the Board on Agriculture. The future financial health of American agriculture and associated food and natural resource industries is absolutely dependent on research based technology. We cannot allow our technology to deteriorate. This sector's long term sustainability and international competitiveness hangs in the balance.

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March 21, 1990

The Honorable Jamie L. Whitten, Chairman
House Appropriations Committee
Subcommittee on Rural Development, Agriculture and Related Agencies
2362 Rayburn House Office Building
Washington, DC 20515

Dear Mr. Whitten:

On behalf of the University of Illinois College of Agriculture, I wish to support, as strongly as possible, the proposed National Initiative for Research on Agriculture, Food and Environment. We believe the approach embodied in this proposal will indeed strengthen the U. S. agriculture, food, and environmental system.

Every day that I serve as Dean of this College, I am made more acutely aware of the problems and challenges facing U. S. agriculture and the crucially important role of agricultural research in solving these problems and meeting the challenges. Our constituency, which includes farmers, agribusiness people, consumers, and the general public, are constantly communicating their concerns about international competitiveness, the impact of agriculture on the environment, and important food safety and nutrition issues. They expect our institutions to help them deal effectively with these issues, as they have for over a century.

When the agricultural experiment stations and USDA-ARS were created, they were focused on production agriculture. Subsequently, the scope of agricultural research has broadened, expanding into processing, marketing, and consumer research in support of agribusiness and consumers; into aspects of home economics, in support of rural and urban families; and into many basic sciences related to agriculture. Now, many agricultural scientists are devoting their careers to study of environmental, conservation, and food safety dimensions of agriculture.

This dramatic increase in program scope, driven by strong demand on the part of both agriculturalists and the general public, has outrun the federal, state, and private support available to the institutions. A major infusion of funds is necessary to prevent publicly supported programs from being further fragmented and to restore and improve our institutional capacity to deal with agricultural problems and challenges.

The proposed National Agricultural Research Initiative is not designed to "throw money" at the problem, but to target support in a strategically sound manner, emphasizing relevance of new research to national problems and quality of proposed research efforts. By focusing on competitive grants, the Initiative will assure that money is allocated only to those efforts that meet these important criteria.

We would very much like to see funding of the National Agricultural Research Initiative exceed the amounts proposed in the President's budget. It is essential that all six program areas be funded, not just the four recommended by the President. The budget needs to go beyond the President's recommendations in the critically important areas of: markets, trade, and policy; new products and processes and value-added; natural resources and environment; and nutrition, food quality and health. Each of these areas is of great importance to both consumers and industry.

We realize that, if the National Agricultural Research Initiative is funded, our scientists will be competing for research support with the best scientists of the nation. We gladly accept that challenge. The competition will keep the standards high, which is very important in achieving national agricultural objectives.

The improvement in the agricultural situation in recent years should not lull us into complacency. The globalization of agriculture, improved productivity of our competitors, and great public concerns about environment, conservation, and food safety require us to develop a sense of urgency. At best, it takes years to conceive, design, test, and implement new agricultural technology. We need to start now. The National Agricultural Research Initiative is a bold step in the right direction.

Sincerely,

W. R. Gomes
Dean

WRG/DAH/jc

Statement by C. Oran Little, Dean and Director
University of Kentucky College of Agriculture
to U. S. House of Representatives Subcommittee
on Rural Development, Agriculture and Related Agencies
March, 1990

Mr. Chairman and Members of the Committee:

The ability of our nation to provide a quality life for our citizens and to increase competitiveness in the international market place is dependent on an accelerated commitment of financial resources to research on agriculture, food and environment. The base support programs funded through the Hatch Act and McIntire-Stennis Act in which the states and federal government share responsibility provide a mechanism by which problems of a local, regional and national nature can be attacked. This resource base must remain intact to continue the strength of this long-standing and time-tested successful state-federal partnership in agricultural research.

Increased research funding through the National Initiative for Research on Agriculture, Food and Environment and administered on a competitive basis will provide a stimulus for new approaches to addressing even more critical challenges of the future. The four areas identified in the President's budget - 1) Natural resources and environment, 2) Nutrition, food quality and health, 3) Plant systems, and 4) Animal systems are key to the continued growth and development of agriculture in the Commonwealth of Kentucky, as well as nationally. However, we feel that funding of the two additional areas recommended by the Natuional Academy of Sciences on 1) New products, processes and engineering, and 2) Markets, trade and policy are vital to developing the full impact of the proposed initiative. Because our future depends on qualty life and health for all citizens, we also strongly support increased funding for the areas of 1) Natural resources and environment, and 2) Nutrition, food quality and health. The future economic and human resource development of our state and nation depend on continued funding of a strong support base and funding of the National Initiative for Research on Agricuture, Food and Environment as outlined in the NASULGC budget propcsal at the level of an additional $150 million for FY 1991. Thank you for your favorable consideration.

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Written Testimony

presented to

Subcommittee on Rural Development, Agriculture,
and Related Agencies
House Appropriations Committee

on behalf of

The National Initiative for Research on
Agriculture, Food, and Environment

by

Dr. R.A. Moore
Director, South Dakota Agricultural Experiment Station
South Dakota State University
Brookings, S.D.

March 29, 1990

As Director of the South Dakota Agricultural Experiment Station, I support the national initiative for research on agriculture, food, and the environment.

We are being challenged by the agricultural competiveness of other nations. In most cases, this is a result of their greater emphasis on agricultural research. We must maintain a leadership role. We have a large land area and a climate that are both very suitable to agriculture. We have achieved great efficiencies in production, processing, packaging, and marketing of agricultural products, yet nearly 20% of our total work force is involved, thus making agriculture the Number 1 industry in America.

This remarkable efficiency has been achieved at some costs. Our environment is showing its fragility, our natural resources must receive better protection. We must be sure that our food will always be as nutritious and as safe as it can be.

For these reasons, we must inject new life into our agricultural and environmental research. For too long (some two decades) we in the state experiment stations have been struggling with only minimal federal funding to provide the research base for the expanding food and fiber needs of a country (and a world) with rising consumer expectations. I want to emphasize that the initiative requests new funding. We cannot subtract from other programs.

I also must emphasize that our state of South Dakota with its limited financial resources needs the stability of formula funding to keep our base programs intact.

However, we welcome the challenge of competitive research funding. We strongly support the manner of funding which this initiative will use. Strengthening grants will benefit small institutions such as ours. We believe we in South Dakota are in a strong position to make a major contribution.

We will use new tools--genetic engineering and biotechnology--to tap unused resources in South Dakota. South Dakota has 24 million acres of native grasslands. Numerous exotic species are abundant in these prairies. Many have characteristics that, if successfully incorporated into economic plants, would reduce our need for chemicals. With recombinant DNA we will move desirable traits from one species into others. We will work to transfer the weed resistance of western wheatgrass into other economic plants. The need for environmentally threatening chemicals will decline if we incorporate the natural insecticides found in the *Echinacea* species into sunflowers (South Dakota ranks 2nd in the U.S. in sunflower production). We will work in other ways to develop built-in mechanisms in both plants and animals to achieve resistance to various pests.

Such research relates directly to the national initiative. We in South Dakota are prepared to be competitive in these areas.

The National Academy of Sciences and National Research Council Board on Agriculture proposed the initiative in response to urgent needs. South Dakota State University was one of the first to join the Coalition for Advancement of Research on Agriculture, Food, and Environment (CARAFE).

As Director of the SDAES, I urge that funding be approved for $150 million in FY 1991 and that this be increased until the entire USDA program plan for the full $500 million is achieved.

The administration is to be commended for its support of the initiative at $100 million for FY 1991 and to increase funding by $50 million a year in each of the out years. This is, however, at the expense of two of the six areas recommended in the initiative. We must not exclude programs on markets and trade policy or on new products and new ways to add value to raw products. This is no time to stop short. All six program areas of the national initiative should be implemented.

We will continue to provide the most nutritious and the most healthful food in the world--and do it with efficiency, and we will protect our environment and conserve our natural resources--for ourselves and for the future.

Thank you.

TESTIMONY SUBMITTED TO

THE U. S. HOUSE OF REPRESENTATIVES

APPROPRIATIONS SUBCOMMITTEE ON

RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

The Honorable Jamie L. Whitten, Chairman

Washington, D.C.

March 28, 1990

by

THE UNIVERSITY OF ILLINOIS

Stanley O. Ikenberry, President
W. Reginald Gomes, Dean, College of Agriculture
Donald A. Holt, Director, Agricultural Experiment Station

LAND OF LINCOLN SOYBEAN ASSOCIATION

Philip Nelson, President

MR. CHAIRMAN AND DISTINGUISHED MEMBERS OF THE RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES SUBCOMMITTEE:

We wish to testify on behalf of the proposed National Soybean Research Laboratory (NSRL) currently being developed at the University of Illinois at Urbana-Champaign. This project represents a bold initiative on behalf of the U. S. soybean industry. It is needed to help ensure the future competitiveness and profitability of the industry and to ensure that it will continue to make important contributions to the U. S. economy and U. S. consumers.

The soybean industry must be prepared to take advantage of emerging opportunities in global markets for soybeans and soybean products. The United States once dominated most of these markets but now faces strong competition from several other nations. The industry needs a comprehensive program designed to (1) identify important marketing opportunities, including new and improved ways of utilizing soybeans and soybean products, and (2) integrate genetic engineering, production, processing, marketing, and utilization research to achieve specific market goals.

NSRL scientists will develop new, effective, and efficient ways to manipulate the physical and chemical nature of soybeans. In cooperation with the private sector, NSRL researchers will develop new soybean varieties to meet specific market needs and new methods of processing, distributing, and marketing soybeans to capture new markets. This will give the soybean industry a solid base of information and developmental procedures from which to launch competitive initiatives.

It is important to note that this initiative has received broad-based support. In addition to the University of Illinois and the Land of Lincoln Soybean Association, this effort has been endorsed by the American Soybean Association, the Illinois Farm Bureau, and the Governor of the State of Illinois.

REQUEST FOR SUPPORT

Because of your leadership and commitment U. S. agriculture is the most productive agriculture in the world. This continuing commitment is reflected in the Subcommittee's action to provide $250,000 in FY 1989 to conduct feasibility and planning studies for the NSRL and $1,320,000 for architectural design and to begin construction in FY 1990. This amount was reduced slightly by the FY 1990 sequestration.

The original feasibility study and planning grant documents were submitted to the U. S. Department of Agriculture and approved by them. Detailed scope and program statements were developed, listing all activities to be conducted in the National Soybean Research Laboratory; the space these activities will require; and the specific configurations and equipment of the

required laboratory and support facilities. We continue to move forward with the development of the laboratory.

Architectural design has progressed through program analysis and we are now completing the schematic design stage. The funds appropriated for FY 1990 will take us through early stages of construction, including preparation of the existing structure.

With your continued support and guidance, we will create a first-rate soybean research facility. To accomplish this objective, we request $3,500,000 to complete the project. When finished, we will have remodeled and renovated three floors of the Old Veterinary Medicine Building on the University of Illinois Urbana-Champaign campus. Because of the importance of this research initiative, the State of Illinois and the U. S. agricultural community are committed to providing moveable equipment for the facility, operating and maintaining the facility, and staffing it, henceforth. Additionally, the University is prepared and committed to provide resources to ensure this lab is a state-of-the-art facility able to effectively meet its mission.

OBJECTIVE OF THE NATIONAL SOYBEAN RESEARCH LABORATORY

The National Soybean Research Laboratory will enable soybean producers, processors, and marketers to achieve technological and economic leadership in the international soybean industry.

MAJOR ACTIVITIES OF THE NATIONAL SOYBEAN RESEARCH LABORATORY

The proposed National Soybean Research Laboratory will mount and coordinate major programs as follows:

1) maintain and improve soybean germplasm and genetic stocks

2) conduct research to enable genetic modification of the soybean with goals of achieving differentiation in world commodity markets and creating, penetrating, and maintaining niche markets for U.S. soybeans

3) conduct research to hasten development and commercialization of new soybean processing and distribution technology and new marketing and utilization strategies

4) conduct research on technological, economic, political, and social issues related to strategic management of U.S. soybean production, marketing, and utilization

5) provide education and information for soybean industry decision-makers and help transfer useful new soybean technology to operators of soybean production, processing, and marketing enterprises

6) coordinate its activities with other major soybean organizations, such as the American Soybean Association, with private sector soybean processing and marketing groups, with other public institutions and agencies, with other soybean research and educational activities in the midwest and south, and with the USDA and other related national programs.

SUITABILITY OF ILLINOIS FOR A NATIONAL SOYBEAN RESEARCH LABORATORY

Illinois leads all other states and almost all other nations in soybean production, processing, marketing, and research and development. It plants more acres, produces more soybeans per acre, and produces more total soybeans than any other state. In addition, it exports more soybeans than any other state.

The public, through state and federal agencies and institutions, invests almost twice as much in soybean research in Illinois as in any other state. Illinois, working through state and national commodity groups, ranks among the top three states in terms of producer investment in soybean promotion and research.

SUITABILITY OF THE UNIVERSITY OF ILLINOIS FOR A NATIONAL SOYBEAN RESEARCH LABORATORY

The University of Illinois at Urbana-Champaign (UIUC) has a unique combination of characteristics that make it an especially appropriate location for a National Soybean Research Laboratory.

Excellent location, stable support, and prestige

The UIUC is centrally located in the midwest and is in the heart of the major soybean production area of the nation. With its diverse economy and major urban population centers, Illinois provides stable support to its land-grant university, which is recognized nationally and internationally as a premier research and educational institution.

Many strong soybean research programs

More than 100 scientists are involved in soybean research in the departments of Agronomy, Plant Pathology, Food Science, Agricultural Engineering, Agricultural Entomology, Agricultural Economics, and Animal Sciences and in the School of Human

Resources and Family Studies. Scientists in the School of Life Sciences and in the Colleges of Veterinary Medicine, Engineering, and Commerce and Business Administration are also conducting research that is directly related to the soybean industry.

Many excellent, related research programs

The University of Illinois has strong basic research and graduate programs in all the major areas of agricultural science. It also has strong applied research programs that make the basic research programs relevant to midwest agriculture. Over 125 University scientists are engaged directly in biotechnology research. They have established a strong leadership position in plant and animal biotechnology research and education.

The University has recognized faculty expertise in molecular genetics, photosynthetic processes, crop evolution, nitrogen fixation and metabolism, biological control of pests, cell and tissue culture, and environmental and genetic toxicology, among other areas related to soybean research.

There are other relevant graduate and professional training programs of demonstrated excellence in botany, entomology, ecology, plant and animal genetics, microbiology, plant, animal and human physiology, biophysics, cell biology, parasitology, bioengineering, chemical engineering, veterinary medicine, human medicine, human nutrition, computer sciences, social sciences, humanities, and law.

Germplasm and genetic stocks collections

The United States Department of Agriculture-Agricultural Research Service maintains over 80 percent of the nation's soybean germplasm collection at the University of Illinois. In addition, the University maintains unique genetic stocks of the wild annual and perennial relatives of soybeans. These collections are maintained, enlarged, and enhanced by further exploration and by new evaluation techniques.

Productive cooperative relationships

Located at the University of Illinois is one of the most productive contingents of USDA-ARS plant scientists, with outstanding fundamental research programs in photosynthesis; nitrogen fixation and utilization; soybean germplasm and variety improvement; weed, disease and nematode control; plant growth and metabolism modeling; field physiology; and soil-water-air-plant relations. Much of the USDA-ARS program at the University of Illinois is devoted to soybean research.

Through the regional research system of the State Agricultural Experiment Station System, the University of Illinois soybean research program is closely linked and coordinated with other soybean research programs in the North Central and Southern regions. Through the International Soybean Program, University of Illinois scientists are linked to soybean utilization research efforts in over 100 nations.

Field and animal research facilities

The University has a major concentration (2200 acres) of field research plots and animal research facilities located adjacent to the campus and to the proposed site for the National Soybean Research Laboratory; five large outlying research centers; and several smaller research fields located throughout the state. Pathogen-free livestock are available for soybean feeding studies. The University houses the designated State Agricultural Experiment Station of Illinois and thus administers federal funds for agricultural research in Illinois.

Relationships with the private sector

The University of Illinois has been particularly successful in attracting support from the private sector for soybean research. Examples include grants of over $1.5 million from the Agrigenetics Corporation; $2 million from Standard Oil of Ohio to establish the SOHIO-UIUC Center of Excellence in Crop Molecular Genetics and Genetic Engineering (awarded in competition with over 950 institutions and private firms); and $1.6 million from the McKnight Foundation for photosynthesis research.

In addition, the institution participates in the Biotechnology Research and Development Consortium (BRDC), comprised of the University of Illinois' Biotechnology Center, the USDA's Northern Regional Research Center in Peoria, IL, and six private companies (American Cyanamid Company, Wayne, N.J.; Amoco Technology Corporation, Naperville, IL; Dow Chemical Company, Midland, MI; Ecogen Inc., Langhorne, PA; Hewlett-Packard Company, Palo Alto, CA; and International Minerals and Chemical Corporation, Northbrook, IL).

The University is also a member of the Midwest Plant Biotechnology Consortium (MPBC), comprising 15 universities, one federal laboratory, a research institute, and 37 agribusiness corporations headquartered in the Midwest. The institution works closely with the soybean seed industry, through foundation seed and seed-certifying agencies of Illinois and other states. Private sector relationships provide for rapid implementation of new university-produced technology in the soybean industry.

Special programs and facilities

Faculty and staff of the National Soybean Research Laboratory will be able to draw on several other unique strengths of the University of Illinois. These include the: Knowledge Engineering Laboratory of the Department of Computer Science; National Center for Supercomputing Applications; Institute of Government and Public Affairs; gateways to national and international computer networks provided by the Computer Services Office; Digital Computer Laboratory; Coordinated Sciences Laboratory of the College of Engineering; food engineering pilot facilities of the Agricultural Engineering Sciences Building; Sponsored Research Incubator Building and associated business incubator program.

A very important program related to NSRL objectives is the Identity-Preserved Grain program of the Illinois Crop Improvement Association, housed in the Sponsored Research Incubator Building. Several activities in the College of Commerce and Business Administration are related to NSRL goals. These include the Executive Development Center and the Office of Business Innovation and Entrepreneurship, among others.

Special facilities that house programs related to the NSRL objectives include: the new Plant Sciences Laboratory; the newly renovated Agricultural Bioprocess Laboratory; the Plant and Animal Biotechnology Laboratory, now under construction; and the proposed Agricultural Library, a new building for which private and state funds are being solicited. This structure will house the agriculture library and, eventually, an international trade information center.

SUMMARY

We request an allocation of $3.5 million in federal funds to complete the National Soybean Research Laboratory. This facility, staffed, operated, and maintained by the University of Illinois and its federal, state, and private cooperators and supporters, will be a great asset to the soybean industry, its customers, and the nation as a whole.

The University of Illinois at Urbana-Champaign, with its central location, outstanding support facilities, and strong institutional commitment to soybean research, is a superb setting for the National Soybean Research Laboratory. The Laboratory will be a strong national center focused on multi-disciplinary, multi-faceted soybean research and education and will enable the U. S. soybean industry to enhance its competitive position in the global agricultural economy.

DAH/WRG/jc - 3/22/90

American Society of Agricultural Engineers

March 26, 1990

The Honorable Jamie L. Whitten, Chairman
House Appropriations Committee
Subcommittee on Rural Development
Agriculture and Related Agencies
2362 Rayburn House Office Bldg.
Washington, DC 20515

Dear Congressman Whitten:

We are pleased to provide 75 copies of Testimony which I am submitting in support of the National Initiative for Research on Agriculture, Food and the Environment.

ASAE is pleased to have this opportunity to provide written testimony. We recognize that only a limited number of people can appear and testify, but we wish to submit our written Testimony. Our Testimony will: (1) confirm the importance of the initiative; (2) emphasize the need for a balanced approach to funding, (3) address the need to increase authorization up to $500 million or to authorize sufficient funds to adequately carry out this national initiative.

We appreciate the opportunity to provide support for this national initiative which is so critical to the U.S. agricultural industry and citizens of our great nation.

Sincerely,

John N. Walker

John N. Walker, P.E.
President

dt

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TESTIMONY

PRESENTED TO

THE SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE AND RELATED INDUSTRIES

HOUSE APPROPRIATIONS COMMITTEE

IN SUPPORT OF

THE NATIONAL INITIATIVE FOR RESEARCH ON
AGRICULTURE, FOOD AND ENVIRONMENT

BY

DR. JOHN N. WALKER, P.E.
PRESIDENT

THE AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS

MARCH 29, 1990

Mr. Chairman, I am John N. Walker, President of the American Society of Agricultural Engineers (ASAE). Our Society is a professional and technical organization of 10,000 members worldwide, who are dedicated to the advancement of engineering applicable to agriculture and other biological systems, including the environment and natural resources, and associated industries. Our members are the people who turn ideas into the systems and equipment for society to use.

The purpose of this Testimony is: 1) to confirm the importance of this initiative; 2) to emphasize the need for a balanced approach for the funding; 3) to address the need to increase authorization up to $500 million or to authorize sufficient funds to adequately carry out this national initiative.

The report of the National Academy of Sciences calls for a bold new research initiative for agriculture. It documents the broad societal issues that are critical to this major U.S. industry and to every citizen of this country. These issues include: 1) restoring and protecting our natural resources and the environment; 2) maintaining and enhancing the competitiveness of U.S. agriculture in the international market place; 3) assuring the dietary health and well-being of our citizens; and 4) making an investment in the future well-being of the country through excellence in science and education.

President Bush's budget for fiscal year 1991 includes $100 million in the USDA/CSRS budget for the National Initiative for Research on Agriculture, Food and the Environment. However, this amount represents just partial funding and includes only four of the six proposed program areas contained in the National Academy of Science report.

It is ASAE's position that it is vitally important to fund implementation of the proposal with a holistic approach that balances investment in all of the six program areas.

Research in practices to manage our "Natural Resources and Environment" must be accompanied by engineered systems. Particularly in the Water Quality and Management Initiatives, it is essential to engineer processes and procedures to reduce the risk of contamination and to integrate systems to increase total water yield while conserving water supplies and preventing soil erosion. A third of our engineering members are working in projects to sustain agriculture, to conserve soil and to protect our biosphere.

For the total program to be effective, funding should be provided for engineering in the "New Products, Process and Value-added Area." There is great potential for engineering development to bring new agricultural products to the commercialization stage and to devise systems that will add value to U.S. agricultural commodities. To realize this potential, the United States must invest in the engineering and research necessary to transform knowledge into useful products and services.

We believe strongly that our nation's best interests are served by investing in competitive grants for all six research areas identified in the National Academy of Sciences' report. This National Initiative is substantially different from previous programs. The expanded competitive grants program will provide better balance, basing new funding on relevance and quality in the six research areas. It is imperative that the initiative funding contain a component for engineering products and processes.

Engineering, when integrated with the multi-disciplinary teams called for in the study, will design the applications that result in a more competitive agriculture. This multi-disciplinary team approach is key to the success of the research effort.

Finally, we are highly supportive of the USDA's program plan for the $500 million per year initiative implementing the recommendations of the National Academy of Sciences. We believe that the funding level must be at levels higher than those proposed by the administration. The needs of the agricultural community and the citizens of this country demand full implementation of the plan in all six areas of research in FY 1991.

ASAE considers it a privilege and a responsibility to join the Coalition for Advancement of Research on Agriculture, Food and Environment (CARAFE) in urging Congress to increase the authorization for competitive grants to fully support the national initiative.

On behalf of all of the 10,000 members of ASAE, I want to express appreciation for the opportunity to provide this testimony on a very critical issue.

1236

TESTIMONY

HOUSE APPROPRIATIONS COMMITTEE

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

MARCH 26, 1990

RELATIVE TO

THE NATIONAL INITIATIVE FOR RESEARCH ON AGRICULTURE, FOOD, AND ENVIRONMENT

PREPARED BY

THE DIVISION OF AGRICULTURE
OKLAHOMA STATE UNIVERSITY

For additional information, please contact Dr. C. B. Browning, Dean and Director, Division of Agriculture, Oklahoma State University, 405/744-5398.

National Initiative for Research on Agriculture, Food, and Environment

Agricultural producers have long faced challenges to profitable production arising from weather variability, pests, diseases, and pressures from inequitable foreign production subsidies. The 1980s brought complex new issues to the forefront, including concern over pesticide and drug residues, increased attention to agriculture as a potential nonpoint source of pollution and the potential for global change which could add a new dimension of uncertainty to production. Advances in the biological sciences present opportunities for application of new approaches to solving traditional and emerging challenges faced by agriculture. A $100 million program of competitive grants is proposed as the first increment of a National Research Initiative supported in a 1989 report of the National Academy of Sciences.

With favorable Congressional action of the proposal, the President and OMB is committed to annual increases of $50 million in each of the following years for agricultural research. Ongoing competitive grants of $42.5 million are incorporated into the initiative. Funds would provide increases for basic plant ($50 million) and animal ($30 million) systems, global change, water quality, and human nutrition. Within the total, $15 million would fund a program to map economically important crop plant genomes to enhance the ability of scientists to effectively apply generic engineering techniques to agricultural problems.

The Coalition for Advancement of Research on Agriculture, Food, and Environment (CARAFE), which includes the National Association of State Universities and Land-Grant Colleges (NASULGC), is unified in supporting these funds for agriculture research. In the future, this initiative could bring $300 - 500 million in new annual funding to help solve the problems of agriculture.

The President's Executive Budget proposes $100 million for this initiative, however, as previously stated, the FY90 Competitive Research Grant Program of $42.5 million will be folded into the National Research Initiative. Thus, the $100 million National Research Initiative actualy represents $57.5 million new dollars. NASULGC is recommending $150 million for the FY91 National Research Initiative. This would also provide funding for two other high priority areas, Engineering Processes and Value-Added Products; and Markets, Trade, and Rural Revitalization, of the National Research Initiative that are not addressed in the Executive Budget.

The following table compares the Executive Budget with NASULGC recommendations for the National Research Initiative grant areas. We support the NASULGC recommendations.

Program (Dollars in Millions)	1991 Executive Budget	NASULGC Recommendation
Natural Resources and the Environment	$15.0	$30.0
Global Change	(9.4)	
Water Quality	(4.6)	
Sustainable Agriculture	(1.0)	
Nutrition, Food Quality and Health	5.0	19.0
Plant Systems	50.0	50.0
Plant Genome Mapping	(15.0)	
Other Plant Systems	(35.0)	
Animal Systems	30.0	30.0
Engineering Processes and Value-Added Products	-0-	11.0
Markets, Trade, and Rural Rural Revitalization	-0-	10.0
Total	$100.0	$150.0

RECEIVED

March 23, 1990

Chairman Jamie L. Whitten
Subcommittee on Rural Development,
Agriculture, and Related Agencies
U. S. House of Representatives
2362 Rayburn Building
Washington, D.C. 20515

Dear Chairman Whitten:

The Colorado River Basin Salinity Control Forum has adopted a position in support of the President's budget request for the Department of Agriculture's Colorado River Salinity Control Program. The formally adopted statement of the Forum is enclosed.

We would appreciate your making this statement a part of the formal hearing record concerning FY 91 appropriations for the Department of Agriculture. We thank you for your support of this program in years past and hope that you will again support funding to continue this valuable program.

Sincerely,

Jack A. Barnett
Executive Director

hsm

enclosure

Colorado River Basin

Salinity Control Forum

Statement
of the
COLORADO RIVER BASIN SALINITY CONTROL FORUM

before the
HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE,
AND RELATED AGENCIES

presented by
JACK A. BARNETT, EXECUTIVE DIRECTOR
March 24, 1990

Supporting funds requested by the President's 1991 budget for the Colorado River Salinity Control Program.

Including:

1. $9,000,000 for cost-sharing onfarm salinity control
2. $5,333,000 for SCS for technical assistance, monitoring, and evaluation
3. $450,000 for information and education

In fiscal year 1990 the Congress provided $10.42 million for work associated with the Department of Agriculture Colorado River Salinity Control Program. As this most cost-effective water quality program is in its early years of implementation, we believe that the approximate $4.4 million dollar increase requested by the President is justified.

There is strong interest and active participation by farmers in the five areas where the program has been initiated. Even a stronger commitment by farmers to implement salinity control measures in the future is demonstrated by the large number of pending applications for participation. Irrigators in the Uinta Basin area of Utah, the Big Sandy area of Wyoming, and the Grand Valley and Lower Gunnison areas of Colorado have volunteered to pay their requested share of the cost for this water quality control program, with benefits being felt many hundreds of miles downstream in the United States and Mexico. In

addition, the Department of Agriculture has recently initiated implementation in the McElmo Creek area of Colorado and is proceeding with actions which will implement the Colorado River Salinity Control Program in the Moapa Valley area of Nevada.

RECENT BACKGROUND
DETAILED FUND ALLOCATION

The onfarm Salinity Control Program was initiated in the Grand Valley of Colorado and the Uinta Basin area of Utah with the use of ACP funds. With Colorado River salinity control funds being currently appropriated, the program is being fully implemented in these two geographic areas. Two years ago the program was started in the Big Sandy area of Wyoming and the Lower Gunnison area of Colorado. In all four areas, many contracts have been signed and many more contracts are being prepared. In the newly initiated McElmo Creek area, contracts are being prepared. By the end of the current fiscal year, it is anticipated that all of the FY 90 funds will be designated for contracts and technical assistance and totally committed, in the very near future, with Colorado River Basin farmers to apply salinity reduction practices.

An additional area has been identified in Colorado and Nevada as having very cost-effective salinity control onfarm program potential and is within the overall USDA selected plan. It is planned that the next onfarm salinity control efforts will begin in the Moapa Valley area of Nevada. Under study are the Price-San Rafael area of Utah and the Hammond area in northern New Mexico. These much-needed water quality programs can move ahead with adequate Federal funding as the Basin states and the local farmers are in a position to financially participate in this cooperative program. The Basin states and the local farmers are ready to proceed with this partnership and pay at least 51 percent of the cost of this construction program.

JUSTIFICATION

The water of the Colorado River system serves some 16 million people and irrigates approximately 1.6 million acres of land in parts of the seven Colorado River Basin states. The River also provides domestic and irrigation water to Mexico. Salinity has long been recognized as one of the major problems in the River. Water users in the lower reaches of the River system have suffered significant adverse impacts due to the River's salinity. These impacts have been estimated to have reached over $300 million a year in the United States. Without the salinity control measures, the salinity of the River is projected to increase beyond the water quality numeric criteria at Imperial Dam, with continued development of the compact-apportioned waters. The economic damages suffered by the water users could double by the turn of the century.

The Basin states' concern with the River's increasing salinity led them to create the Colorado River Basin Salinity Control Forum in 1973. The Forum, whose members are appointed by

the governors of the respective states, developed a salinity control policy that stated that while the Basin states continue to develop their compact- apportioned waters, salinity concentrations must be maintained at or below those levels found in the lower River in 1972. This salinity control objective is the Basin states' adopted-EPA approved water quality standard for the Colorado River. The standard was adopted pursuant to the Clean Water Act. The policy forms the basis for the cooperative federal/state, Basin-wide salinity control plan. The Forum has a continuing responsibility to see that a salinity control plan is implemented to meet the policy objectives.

After discussions involving the Federal Government, the Republic of Mexico, and the seven Colorado River Basin states, the Congress enacted in 1974 the Forum-sponsored Colorado River Basin Salinity Control Act (P.L. 93-320). Title I of the Act established a program to reduce the salt concentrations below Imperial Dam (the last diversion point on the Colorado River in the United States), so that the United States could honor its 1973 agreement on Colorado River salinity with Mexico. Title I was identified by Congress as a federal commitment. The Act established a program, Title II, which allowed the States and the Federal Government to work together to prevent salinity increases in the Colorado River above Imperial Dam, benefitting users in the United States as well as Mexico. The 1974 Act also created a Colorado River Basin Salinity Control Advisory Council, composed of gubernatorial representatives of the Basin states to advise the Secretaries of the Interior and Agriculture and the Administrator of the Environmental Protection Agency as to needed annual adjustments to the salinity control effort.

In 1984 the Congress enacted much-needed amendments to the 1974 Act. In response to issues first raised by the Forum, the amendments resulted in Public Law 98-569, which authorized additional Department of the Interior and Department of Agriculture activities needed to meet the objectives of the 1974 Act. In recognition of the proven cost-effectiveness of Agriculture's onfarm management activities in controlling river salinity in the Basin, a separate Colorado River Basin onfarm management salinity control program was authorized for the Department of Agriculture.

Consistent with the newly enacted amendments and in working with Agriculture, the Advisory Council made specific recommendations in its 1989 Annual Report relative to FY 91 funding for the salinity control efforts. The funding level recommended by the Council to maintain salinity concentrations at or below the adopted salinity standards is greater than the Forum is now requesting. The Forum believes that the President's request, given today's budget constraints, is reasonable and appropriate.

Jack A. Barnett
Executive Director

STATEMENT REGARDING

FISCAL YEAR 1991 APPROPRIATIONS

PRESENTED TO

COMMITTEE ON APPROPRIATIONS, SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES
U.S. HOUSE OF REPRESENTATIVES

BY THE

INTERNATIONAL APPLE INSTITUTE

March 28, 1990

Derl I. Derr, President
International Apple Institute
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McLean, VA 22101
Tel: (703) 442-8850
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The International Apple Institute (IAI) is an Association serving and representing all segments of the apple industry. The Association's membership consists of 23 State/Regional Organizations of producers who grow approximately 90% of the U.S. apple crop and over 600 individual firms who handle and market the bulk of the nation's apples.

March 28, 1990

SUMMARY OF

The International Apple Institute's (IAI's) apple research add-on request and support of research programs in the USDA's 1991 budget.

PART I -- ADD-ON REQUEST

The IAI proposes an increase of $6 million be added to the budget of the USDA Agricultural Research Service (ARS) for apple research to be implemented in $2 million annual increments over a consecutive three year period beginning with fiscal year 1991 and to be fully implemented at the $6 million level in fiscal year 1993 (See attachments A & B).

PART II -- SUPPORT OF RESEARCH PROGRAMS IN THE USDA 1991 BUDGET

The IAI supports the research funding request contained in the USDA 1991 fiscal year budget proposal. The IAI specifically supports the $661.1 million program level of the Agricultural Research Service (ARS). The IAI also urges that the following two buildings and facilities provisions be retained:

- o $10.1 million to construct a replacement laboratory for fruit research in Yakima, Washington and;
- o the construction of a new Animal and Plant Health Inspection Service (APHIS) National Plant Quarantine Center at Beltsville, Maryland.

The IAI extends its budget support to include USDA's food safety initiatives most specifically a new funding of $25 million to provide for a multi-agency effort to collect and analyze residue data regarding actual exposure levels in the U.S. food supply. The IAI supports the USDA request that the first phase of the data collection program shall focus on fruit and vegetables. Additionally the USDA is urged to give high priority to Integrated Pest Management (IPM) and minor use pesticide programs and clearances in issuing special research grants within the Cooperative State Research Service (CSRS) program.

ATTACHMENT A

International Apple Institute (IAI) Apple Research Proposal

An initiative for a funding increase of $6,000,000 to be added to the budget of the USDA Agricultural Research Service (ARS) for apple research. It is requested the increased funding be implemented in $2,000,000 annual increments over a consecutive three year period beginning with fiscal year 1991 and to be fully implemented at the $6,000,000 level in fiscal year 1993. The phase-in provides for maximum efficiency in the start-up and subsequent continuation of needed new research projects.

The following allocation of funds according to research priorities is requested:

Priorities	Fiscal Year Funding Level			
	1991	1992	1993	and continued
Reduction of Pesticides	$1,000,000	$2,000,000	$3,000,000	
Postharvest Technologies	1,000,000	1,500,000	2,000,000	
Other	0	500,000	1,000,000	
TOTAL	$2,000,000	$4,000,000	$6,000,000	

The justification and discussion of priorities follow.

JUSTIFICATION -- Apples are a nutritious and healthy dietary basic. The consumer must receive fruit of predictable quality. Growers must be able to produce apples with a minimum of chemicals and cost. Fruit that will pack, store, and ship without decay or breakdown is much more capable of being marketed domestically or exported.

Research levels have diminished and apples have not received research attention commensurate with the size of the crop and its gross value. Add-on values developed in storing, packing, handling and shipping sustain considerable employment in rural areas.

Apples have several unique research needs and problems to be solved. Because research techniques suggest imminent "break throughs", an increase in the ARS budget to conduct research in the following priority areas would well serve the interests of the American public.

REDUCTION OF PESTICIDES - To conduct research that will result in lessening of use of pesticides in the growing, handling, storing and processing of apples. Currently, apple trees must be sprayed several times a year for a multitude of disease and insect pests.

In order to grow consumer acceptable apples, growers use various chemicals for control of disease, insects, weeds and other pests. Such controls can amount to 20% of cost of production. There is a desperate need to reduce use of chemicals while retaining fruit quality and reducing costs to growers.

Although some alternative control approaches are promising, there continue to be 35 or more diseases, insects and other pests that attack apples. Some very promising scientific discoveries show merit as techniques for combatting such pests and reducing use of persistent chemicals.

An example is the research involving distribution in the orchard of fibers saturated with sex pheromones (scent) which confuse males seeking females for mating, thus dramatically reducing reproduction of codling moth. Codling moth is the cause of worms in apples in all production areas of the U.S. Chemicals presently used to combat codling moth also destroy beneficial insects that help control other pests.

Technology needs to be perfected for successful non-chemical control of codling moth. There are many other similar possibilities with insects, mites, aphids, and other pests.

In the pathology area, there are promising antagonistic bacterial organisms; "good" bacteria that can consume "bad" bacteria. Those need to be nurtured to develop non-chemical systems of disease control also show promise in scientific experiments.

Reduction of sprays would further protect the consumer from residues, reduce air, water and soil pollution and lessen hazards to farm workers.

POSTHARVEST TECHNOLOGIES - **To conduct research on the postharvest aspects of apples to enhance the keepability; reduce the use of chemicals for pathogens and maladies in stored fruit; perfect systems of segregating apples based on internal quality, firmness or other criteria. To develop technology that will reduce loss of stored fruit; extend the keepability and thus the marketing season; ensure a consistent high quality apple for the consumer; and enhance the export potential of apples.**

To provide a consistent high quality product to the consumer, sustain exports and ensure that apples will retain flavor and firmness in storage without rotting, promising technologies need further research attention.

Firmness is a universal measurement of quality. Apples from a given box will vary considerable in firmness, and thus in keepability and consumer aceptance. Promising research that could result in instrumentation in the packing line that would measure each fruit for firmness and segregate those less firm from more firm is under development and needs to be pushed forward.

A storage technique involving use of very low oxygen, if perfected, promises to reduce "scald," a discoloration of the skin of the fruit that is now controlled with chemical agents. Perfection of scientific knowledge in that area would reduce use of chemicals, improve quality and greatly enhance export potential.

Study of relation of mineral nutrition, particularly calcium, to product quality, storage and market life is an area of intense need. Research with use of antagonistic bacteria to control decay in stored fruit is as applicable as use of beneficial bacteria in growing.

OTHER - In addition to the above high priority areas there is a significant list of other problems which can be solved through focused research projects. These include invstigations in the areas of mineral nutrition in both the tree and fruit; the perfection of mechanical harvest or other systems of mass removal from trees for the fresh market; new rootstocks and varieties that best meet the needs of U.S. growers; growth regulators to ensure tree size control, enhance annual bloom, and adequately thin overset crops of apples; and the effective control of weeds and animal predators.

These are examples of areas where scientists, with additional funds, could much more rapidly achieve success in developing information of use to all aspects of the apple growing, handling and marketing chain.

ATTACHMENT B

Facts About Apples and the Apple Industry
in Support of Funding Apple Research

THE APPLE . . .

- is grown as over 2,500 varieties in the United States — however, 15 popular varieties account for about 90% of the production — in fact, eight of these (Red Delicious, Golden Delicious, McIntosh, Romes, Granny Smith, Jonathan, York and Stayman) account for 80% of U.S. production;

- is a popular, healthy, regularly consumed food year round — 70% of Americans say apples are their favorite fruit for snacking — nine out of ten families purchase apples and apple products regularly;

- is rich in fiber, has no cholesterol, only 81 calories — and has a delicious flavor;

- is uniquely versatile for the consumer — the apple can be crunched, cooked, sliced, diced, sauced, sipped, and even candied, garnished or used as a decoration;

- there is no stopping the apple as America's favorite fruit

THE U.S. APPLE INDUSTRY . . .

- in an average year produces 210 million bushels of apples — production reached over 250 million bushels for the record 1987 crop;

- produces nearly a bushel (42 pounds) of apples per capita -- that's equivalent to about 100 apples per person in the U.S.;

- grows apples commercially in 35 states. Top producing states include Washington, New York, Michigan, California, Pennsylvania, Virginia and North Carolina;

- is made up of over 11,500 commercial growers who are individual family owned small businesses operating over 473,000 acres of bearing orchards;

- gross returns to growers exceeds $1 billion annually ranking apples second only to grapes as a leading non-citrus fruit produced in the U.S.;

- in addition to growers, consists of more than 1,000 specialized firms which add another $1 billion in value through the handling, processing and marketing of apples;

- generally 55% of the U.S. apples are eaten as fresh fruit and 45% processed into apple products. Of those processed annually, approximately 45% is pressed into juice; 35% canned mostly for sauce, with the remaining 20% frozen, dried or other purposes such as baby food, apple butter, jelly and vinegar;

- production is located 50% in the West; 35% in the East and the balance of 15% in the Central states;

- is a net exporter of fresh apples with annual exports over the past 5 years ranging from 8 to 13 million bushels. This is offset by imports which have been relatively stable at the six million bushel level during this same period;

- ranks high as a global producer of apples — producing approximately 20% of the reported world commercial production (Russia and China do not report); 25% of the Northern Hemisphere total apple crop, and 80% of the apples grown in North America;

- provides a top performing product for the retailer with apples tied for first place with bananas, each representing 18% of fresh fruit sales. Apples are alone at the top in profits for retailers with a 40% gross-margin return.

Farm Credit Services

375 Jackson Street
P.O. Box 64948
St. Paul, Minnesota 55164-0948
612/221-0800

March 21, 1990

The Honorable Jamie L. Whitten, Chairman
House Committee on Appropriations
and Subcommittee on Rural Development,
Agriculture and Related Agencies
2362 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

I am writing you today in my capacity as President and Chief Executive Officer of Farm Credit Bank of St. Paul; representing concerns of our organization and its farmer owners over the proposed budget cuts for the 1991 FmHA budget, especially in the Farm Ownership guarantee loan program. I request that this statement be included in the record of proceedings regarding the FmHA budget for FY 1991.

This statement addresses the specific experience of the Seventh Farm Credit District (which includes the Farm Credit Bank of St. Paul and affiliated Farm Credit associations serving farmers in the states of North Dakota, Minnesota, Wisconsin and Michigan) with: 1.) the FmHA guaranteed loan program; 2.) our interest in expanding our use of that program to facilitate a transition of many of the loan restructures made during the past three years; 3.) some of the operational challenges we've experienced; and 4.) the continuing cooperative spirit with which we are working with FmHA at national, state and local levels to achieve our mutual goals.

The Farm Credit associations and the Farm Credit Bank of St. Paul (FCB), as Approved Lenders, have seen the value of the FmHA programs for the farmer, the lender, and the rural economy. As rural America has gone through the difficult times of the 1980s, the FmHA guaranteed loan programs have allowed lenders to continue extending credit to farmers experiencing difficulty. Benefits to the farmer include an opportunity to continue the farm business, to return to or improve viability and an interest rate hedge. Benefits to the lender are improved credit quality, reduced capital requirements and improved loan risk management.

The Seventh Farm Credit District volume guaranteed by FmHA is $334.4 million or over 50% of the $623.6 million of FmHA guaranteed loans for all Farm Credit districts. This includes 697 farm ownership loan guarantees for $113.2 million and 2,472 operating loan guarantees for $221 million. Our emphasis and usage of these programs goes back to the early 1980s. Overall borrower performance on loans guaranteed by FmHA has been favorable.

The Seventh Farm Credit District holds an estimated 70% of the total FmHA guarantees in our four-state area and has filed about 30% of the loan loss claims submitted to FmHA. Other lenders hold about 30% of the total FmHA guarantees and have submitted approximately 70% of the loss claims. We value the relationships we have with FmHA in each of the four states and do not intend to request guarantees on loans to farmers that do not have a reasonable chance of success.

The Seventh Farm Credit District began to aggressively restructure financially troubled loans in late 1986 and early 1987, a year before the Agricultural Credit Act of 1987 was enacted. At that time, we had $1.1 billion in unrestructured nonaccrual real estate loan volume. As of 12/31/89, that figure was $108 million. At the present time, we have 8,543 restructured real estate loans for $1.168 billion, a vast majority of which are performing in a satisfactory manner and lead us to continue to try to work with stressed accounts to find a solution that is good for both parties.

Because of our intense restructuring efforts in 1987, and because many of these restructures were written for a three year period, we have 2,331 restructured loans for $365 million that need to be reviewed in 1990. Many of these borrowers were given an 8% or 9% interest rate for three years and were then to go to the prevailing market rate. Whether or not these farmers can pay the prevailing rate depends on the type of enterprise and the weather conditions experienced over the past three years. In some parts of our district conditions have been very favorable and many of the farmers will be able to pay the prevailing rate. Other areas have been severely hit with drought over the past several years. For example, in North Dakota we will need to make more extensive use of the FmHA buydown guarantee programs than in our three other states.

Performance on our restructured real estate loans that are maturing or must reprice has been very favorable. Seventy percent (70%) are in accrual status and another 21% are considered earning assets as interest income is generated when payments are made. Twenty percent (20%) carry an acceptable credit classification and 94% are current in payment status. Less than 5% are in bankruptcy or foreclosure.

Overall, this group of loans has performed well and has shown improvement in financial condition and repayment capacity. Many have a reasonable chance for success but we estimate that at least one-third need the benefits of the FmHA guaranteed loan programs. Therefore, there are about 700 to 800 real estate loans for about $120 million that we expect we will need to try to obtain FmHA Farm Ownership guarantees on across our four-state area in 1990.

In anticipation of this situation, I, along with members of the Board of Directors went to Washington last fall to talk with key officials at the FmHA national office to see if we could work together to utilize the FmHA guarantee program on some of these loans where the individual farmer will not be able to cash flow without some interest rate concession.

We met with USDA Under Secretary for Small Community and Rural Development Roland Vautour, who oversees the FmHA programs and then with Jack Hertzler, Assistant Administrator, Farm Programs, to alert them to the large number of loans we expected to bring to FmHA in our four-state area.

Of course, at that time, the FmHA was experiencing some bad press based on a GAO report alleging serious abuses in the guaranteed loan program. While interested in our proposals, they were understandably reluctant to commit to additional funding for our district.

Therefore, we held a meeting in St. Paul in October which was attended by a delegation headed by Jim Radintz, Director of Farm Programs Loan Making Division, from the Washington FmHA office, state FmHA directors or their representatives from each of our four states, and FCB district and service center personnel. In this meeting we reviewed our situation, outlined our proposals, reviewed several case examples and discussed operational issues.

We agreed to promote meetings between the Seventh Farm Credit District and FmHA county officials in each state, reviewing Farm Credit Bank case examples to determine their eligibility for an FmHA guarantee.

FmHA also requested that during this process of case example review, we also review some of FmHA's case examples to determine whether with an FmHA guarantee we could take some of their borrowers into our portfolio . . . to graduate them from FmHA. As you're well aware, Mr. Chairman, this has been a major expectation of FmHA by the Congress.

Since our October meeting, 12 of our 24 service centers have held joint meetings with local FmHA personnel. State FmHA officials have attended these meetings and a representative from the FmHA national office attended three of these meetings. Some concern areas have been identified, including: the amount of paperwork involved in processing guarantees, especially documents not directly related to credit analysis such as debarment, sodbuster and swampbuster; the inability to assist some operations because of the family farm size rule interpretations; the inability to accrue interest on accounts for longer than 90 days after FmHA approves the liquidation plan; and FmHA's inability to subordinate their direct loan to allow FCS to maintain its priority when reamortizing or rewriting a mortgage in order to obtain a guarantee. Communications with FmHA personnel, which has been a priority in the St. Paul district, has increased and we are working together with FmHA in solving operational problems at the appropriate level.

In fact, the national FmHA office has written indicating they have proposed a regulation change which, if adopted, will allow FmHA to subordinate its real estate lien position and permit a lender to reamortize a guaranteed loan account, and maintain its prior lien position. Further, another proposed regulation change, if adopted, will allow interest accrual up to 150 days from the date FmHA approves the liquidation plan. We are pleased with the spirit of cooperation to date. We hope Congress will allow FmHA at the national and state levels the flexibility to work with us to resolve these concerns.

Our concern about potential abuses of the program has resulted in our working closely with FmHA officials to ensure this does not occur. FmHA has two control points. One is at the time of approval, and another is through a periodic review of files. The Seventh Farm Credit District has several control points. Typically, an association will have a person who specializes in processing guarantees who reviews loan officer work prior to submittal to FmHA. In addition, local supervisors review loan officer work and the FCB St. Paul loan review department periodically examines files for compliance with program requirements.

As I indicated at the outset, our primary concern at this time deals with funding allocations. The Seventh Farm Credit District took the major risk on these farmers three years ago when they were really in financial trouble. These borrowers have proven themselves to us and we believe they deserve to continue their farming operation. For many, a 3 or 4% interest rate increase at the maturity of their restructure will not allow them to cash flow. For the past three years the many FCS borrowers who have not experienced financial difficulties have carried the cost of helping those farmers who did experience financial difficulty and were restructured. Now we need help for this group with a government guarantee and believe, given their track record, a FmHA guarantee should not be nearly as risky as it might have been three years earlier. We think this is a fair and reasonable request, Mr. Chairman, and believe our work with the local FmHA offices will bear out the validity of our program.

The recommended cut from $719 million to $150 million for 1991 in guaranteed Farm Ownership loans troubles us greatly. In the St. Paul district alone we believe we could utilize up to $120 million this year. I've just been informed, in fact, that in two of our four states (Michigan and Wisconsin), we've already utilized our full allocation for the year and expect to do the same in North Dakota and Minnesota. We are confident that our program has merit.

In 1991, the remainder of the Farm Credit System institutions and other lenders will have the majority of their restructures coming due and, unless interest rates lower considerably in the meantime, they will be facing the same challenges we're facing today. If our experience this year is proven to be correct, there will be a major need for FmHA Farm Ownership guaranteed loans by the rest of the System in 1991.

We support the shift from FmHA direct lending to private lending guaranteed by FmHA. However, we also recognize there is a place for the FmHA Direct Loan program, especially in establishing beginning farmers. We are particularly interested in and support the new interest subsidy program for guaranteed loans. This interest subsidy is estimated to average 3% and would allow reductions in the interest rate on a guaranteed loan down to the rate on a regular direct loan, if necessary, in order for the borrower to cash flow. This program will further promote the graduation of many existing borrowers to private credit.

In conclusion, the FmHA guaranteed loan program is working and FCS has received good cooperation from FmHA personnel. We support the shifting from direct to guaranteed loans. We are solving operational concerns at local, state, and national levels as appropriate. Our major concern is with the program budget for Farm Ownership guarantees in 1991. $150 million is clea inadequate when you become aware that in our district alone there will be 1,439 maturing restructures coming due in 1991 for Farm Ownership guarantee consideration that total $207 million. Traditionally, we've sought guarantees on other than our maturing restructures. (I have attached as Exhibit A a chart which indicates the maturing real estate loan restructures by quarter through 1992 for our district.)

With adequate Farm Ownership guarantee funding, continued improvement in the farm economy, excellent working relationships with FmHA staff and solving some minor operational problems, we believe there are long-term benefits to be gained by everyone . . . the farmer, the lender and the rural community.

Thank you for the opportunity to present our statement to your subcommittee. I request that the statement in its entirety be printed in the official record.

Sincerely,

Larry D. Huegler
President and
Chief Executive Officer

JG/fwd:11
Attachment

Exhibit A

MATURING REAL ESTATE LOAN RESTRUCTURES BY QUARTER
(millions)

		District	
	Qtr.	Number of Loans	Dollar Volume of Loans
1990	1.	747	$125.4
	2.	682	106.5
	3.	348	51.3
	4.	554	82.5
Total		2331	$365.7
1991	1.	431	$ 67.6
	2.	276	46.0
	3.	188	26.5
	4.	544	67.2
Total		1439	$207.3
1992	1.	585	76.6
	2.	351	52.1
	3.	144	20.9
	4.	306	37.7
Total		1386	$187.3

Cornell University
Cornell University Agriculture Experiment Station
Cornell University • State University of New York • U.S. Department of Agriculture

Office of Research
New York State College of Agriculture and Life Sciences

Office of the Director, 245 Academic 1
Ithaca, NY 14853-7601 607/255-5420

March 22, 1990

The Honorable Jamie L. Whitten, Chairman
House Appropriations Committee
Subcommittee on Rural Development, Agriculture, and Related Agencies
2362 Rayburn House Office Building
Washington, DC 20515

Dear Mr. Whitten:

SUBJECT: TESTIMONY RELATIVE TO THE NATIONAL INITIATIVE FOR RESEARCH ON AGRICULTURE, FOOD AND ENVIRONMENT

I am writing to encourage your support for the National Initiative on Agriculture, Food, and the Environment. A bold new step has been taken to significantly enhance funding for agricultural research that will have its most important payoffs in strengthening our food production capacity. I have tried to isolate three important reasons why I feel the Initiative merits your support at this time:

1. Research is the reason why the U.S. has highly efficient food production systems. Our ability to compete in a global market rests largely on increasing the efficient use of labor and resources. Research will provide the means for farmers to increase their effectiveness in the future. As we have tended to do the easiest things first, future developments will require enhanced resources in terms of direct research expenditures, training more qualified scientists, and improving the knowledge and skill level of farmers.

2. Current safety and high quality of US food products is based upon technologies and production methods that come from research. New challenges presented by a need to address the environmental and social issues surrounding agriculture require additional resources.

3. Competitive funding programs make the best use of scarce dollars as they require the development of well-conceived projects.

As I meet with farmers and agribusiness groups in New York, I find solid support for the value of research coupled with a strong extension system in improving their ability to meet the food and fiber needs of this country. The National Initiative has much importance in enhancing the future effectiveness of U.S. agriculture.

I appreciate this opportunity to have my views heard.

Sincerely yours,

Brian F. Chabot

Brian F. Chabot
Acting Director

COUNCIL FOR
CITIZENS AGAINST
GOVERNMENT WASTE
1-800-USA-DEBT

March 21, 1990

The Honorable Jamie L. Whitten
Chairman
House Appropriations Subcommittee
on Rural Development, Agriculture,
and Related Agencies
2362 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman,

As President of the Council For Citizens Against Government Waste (CCAGW), I am submitting testimony for the record regarding the annual appropriation for the Rural Electrification Administration (REA).

CCAGW is a grass roots lobbying organization committed to enactment of legislation that reduces government waste and increases the efficiency of federal government operations.

CCAGW and the 350,000 citizen members of its affiliated educational organization, Citizens Against Government Waste (CAGW), urges Congress to reduce spending for the REA.

REA was originally established in 1935 to provide government loans to eligible borrowers for the purpose of extending electric service to unserved, rural areas. In 1990, REA's mission has been accomplished.

CCAGW recommends reducing funding, increasing interest rates, and targeting benefits to the needy, so that REA can continue to serve rural America while reducing the nation's budget deficit by $5 billion over five years.

Mr. Chairman, please consider our recommendations in the upcoming appropriations debate. Thank you for including CCAGW's position in the written record of the hearings.

Sincerely,

Alan L. Keyes
President

attachment

COUNCIL FOR
CITIZENS AGAINST
GOVERNMENT WASTE
1-800-USA-DEBT

[illegible] Ave. N.W. Suite [illegible] Washington D.C. [illegible]
Telephone [illegible]
Fax [illegible]

RURAL ELECTRIFICATION ADMINISTRATION

STATEMENT OF ALAN L. KEYES

PRESIDENT

COUNCIL FOR CITIZENS AGAINST GOVERNMENT WASTE

BEFORE THE HOUSE APPROPRIATIONS

SUBCOMMITTEE ON RURAL DEVELOPMENT,

AGRICULTURE, AND RELATED AGENCIES

MARCH 26, 1990

Mr. Chairman and members of the Committee, I appreciate this opportunity to discuss the Rural Electrification Administration (REA). The Council For Citizens Against Government Waste (CCAGW) is a grass roots lobbying organization committed to enactment of legislation that reduces government waste and increases the efficiency of federal government operations.

CCAGW and the 350,000 citizen members of its affiliated educational organization, Citizens Against Government Waste (CAGW), urges Congress to reduce spending for the REA.

REA was originally established in 1935 to provide government loans to eligible borrowers for the purpose of extending electric service to unserved, rural areas. In 1949, REA's mission expanded to include loans for telephone service. In 1990, REA's mission has been accomplished.

What began as a worthwhile program to move rural America into the 20th century has led to one of the most wasteful annual spending sprees in Congress. Since 1973, nearly $20 billion of taxpayer money has been appropriated for a program with a near 99% success rate. In fact, the percentage of farmers with electricity during that time period increased by only .3%.

Congress has lost sight of REA's original purpose to bring electricity and telephone service to rural America. Congress continues to appropriate nearly $1 billion per year for loans to rural cooperatives that include financially sound utilities in urban and suburban communities, as well as exclusive resorts like Vail, Colorado and Hilton Head Island, South Carolina. This outrageous amount of Congressional spending coupled with taxpayer-subsidized interest rates of 2% and 5% has created booming industries. In fact, the combined assets of electric distribution borrowers alone exceeds $20 billion.

The Council For Citizens Against Government Waste is asking you to implement reforms to the REA so that the inequity to American taxpayers will end. We are not asking you to abolish REA or to cause financial hardship to American farmers. REA loans should go to the people who need the assistance the most. We must identify those people and target the benefits to them.

CCAGW supports reforms similar to those introduced by Congressman Jim Bates. H.R. 1232, the Rural Electrification Administration Lending Assistance Improvements Act, calls for replacing high-subsidy REA direct loans with loan guarantees for private loans. The federal deficit would be reduced by

$5 billion over the next 5 years and the loan guarantees will only assist legitimate, rural borrowers.

H.R. 1232 calls for reforms implied in the 1973 amendments to the Rural Electrification Act. In 1973, Congress included language to the effect that borrowers should be encouraged and assisted to satisfy their credit needs from their own financial organizations and other sources at reasonable rates and terms. Subsidizing financially strong cooperative borrowers at 2% and 5% interest rates is not reasonable when current market interest rates are between 10% and 12%.

According to the Congressional Budget Office, moving interest rates to market levels "would have little effect on the rates of most cooperatives...as interest charges account for only a small percentage of the average ratepayer's bill." The Office of Management and Budget, the Department of Agriculture and the REA report that the average consumer's bill will go up by "only 74 cents per month." In addition, the REA states that the average income of farmers increased six times between 1948 and 1988 while the cost of electricity to the average farmer only doubled in that same time period.

Members of the committee, the time has come to recognize REA's success in bringing electricity and telephone service to rural America. The Council For Citizens Against Government Waste, the Bush Administration and the American people urge you to reduce funding for this program. By reducing funding, increasing interest rates, and targeting benefits to the needy, REA can continue to serve rural America while reducing the nation's federal deficit by $5 billion over five years.

Wasteful government spending can no longer be tolerated in a nation whose federal debt is nearing the $3 trillion mark. Fiscal sanity must be restored to this nation for the sake of our children and grandchildren.

I260

University of Hawaii at Manoa

College of Tropical Agriculture and Human Resources
Gilmore Hall 202 • 3050 Maile Way
Honolulu, Hawaii 96822

Office of the Dean and Director

March 27, 1990

RECEIVED

APPROPRIATE

The Honorable Jamie L. Whitten, Chairman
House Appropriations Committee
Subcommittee on Rural Development, Agriculture
and Related Agencies
2362 Rayburn House Office Building
Washington, DC 20515

Dear Representative Whitten:

I am providing the enclosed testimony in support of the National Initiative for Research on Agriculture, Food and Environment.

Yours sincerely,

N. P. Kefford
Dean

jy
Enc.

AN EQUAL OPPORTUNITY EMPLOYER

Testimony
The House Appropriations Committee
Subcommittee on
Rural Development, Agriculture and Related Agencies

Relative to
The National Initiative for Research on Agriculture, Food and Environment

by
N. P. Kefford
Dean
College of Tropical Agriculture and Human Resources
University of Hawaii at Manoa

I support the need for new monies to increase the funding of research as proposed in the National Initiative for Research on Agriculture, Food and the Environment.

While this testimony will stress the needs of Hawaii, I would point out that the whole nation must face higher food prices, at best, or, at worst, will lose the ability to feed itself, unless the new technologies that result from research become available to replace those that have been lost due to changing policies.

In Hawaii, the deficiencies in the current levels of funding are particularly evident because research-based information on tropical agricultural systems and environments is must less than that existing for the temperate regions. For Hawaii to compete nationally and internationally, this gap in research must be closed through an infusion of additional funding.

Hawaii once had a technological advantage over competitor countries in the tropics. This advantage has been lost due to low funding levels and the regulatory environment prevailing in the United States. Leaders of Hawaii's agricultural industries who visit tropical countries in Asia and the Pacific Rim report that their counterparts in those countries laugh at the constraints under which agriculture in the United States must function. They are laughing about our impotence to compete. To compete globally once more, Hawaii and the United States must regain technological advantages through intensified research fueled by new funding.

This college must serve the interests of producers, processors, marketers, consumers, and the environment. Maintaining an even balance across this spectrum of responsibilities is increasingly difficult due to the dynamic changes in agriculture, communities, and fields of science. Consistent research advances in all areas must occur if full benefits to our society are to accrue.

The renewable natural resources of Hawaii are unique, vulnerable and more varied than most states. Conservation of those resources will require sound decision making based upon research. Such research must be accelerated.

Hawaii has established a joint research program with other units of the American Pacific and the need for research by our sister units is even greater than for Hawaii because they are further behind their competitors.

On behalf of Hawaii and the American Pacific, I commend to you the National Initiative for Research on Agriculture, Food and Environment.

INSTITUTE FOR ALTERNATIVE AGRICULTURE, INC.

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MAR 3 0 1990

March 28, 1990

RECEIVED

The Honorable Jamie Whitten
U.S. House of Representatives
2362 Rayburn House Office Building
Washington, DC 20515

Dear Congressman Whitten:

Please find enclosed three (3) copies of my written testimony in support of an appropriation for Subtitle C of Title 14 of the Food Security Act of 1985, biological pest control, and Appropriate Technology Transfer for Rural Areas (ATTRA). I hereby respectfully request that this statement be included in the formal hearing record.

Thank you for your kind consideration of this request.

Sincerely,

I. GARTH YOUNGBERG, Ph.D.
Executive Director

Enclosures

IGY:scb

OFFSET

Board of Directors

INSTITUTE FOR ALTERNATIVE AGRICULTURE, INC.

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STATEMENT OF

Dr. I. Garth Youngberg
Executive Director
Institute for Alternative Agriculture, Inc.

TO THE

House Appropriations Subcommittee on Agriculture,
Rural Development, and Related Agencies

ON

Appropriations for Subtitle C
Agricultural Productivity Research
Title 14 of the
"Food Security Act of 1985";
Biological Pest Control; and
Appropriate Technology Transfer for Rural Areas (ATTRA)

April, 1990

MR. CHAIRMAN; MEMBERS OF THE SUBCOMMITTEE:

The Institute for Alternative Agriculture is grateful for the opportunity to present testimony on the need for increased funding for research and education in the area of lower-input, more sustainable farming systems. The Institute, which is governed by a 12-member Board of Directors that includes farmers, scientists, educators, and businessmen, has as its major objective the advancement of agricultural systems that are resource-conserving, environmentally-sound, and sustainable in the long term at the same time that they are economically profitable.

Specifically, we would like to urge increased funding in the FY 1991 budget for the USDA Low-Input Sustainable Agriculture (LISA) program, funding for expanded research in biological pest control, and renewed funding for the information services provided by the ATTRA (Appropriate Technology Transfer for Rural Areas) program. We believe that an allocation of funds to research and education for

More---

Board of Directors

a more sustainable agriculture ought to be a first-level priority for the federal agricultural budget, even if such funds need to be redirected from other program areas. Let me address each of these program needs in turn.

The USDA LISA program, originally authorized by Subtitle C of Title 14 of the 1985 Food Security Act, has in its three years of work already added substantially to the production options available to American farmers. We have been so impressed with the results of the LISA projects that we have created a special report on the program published in our monthly newsletter, **Alternative Agriculture Resources Report**, that is mailed to county-level Extension agents across the nation. For example, with funding from the LISA program:

- Texas fruit specialists have found a way to significantly lower the use of chemical fungicides on strawberry plots by the use of clear plastic that allows solar rays to kill weed seeds, nematodes, and soil-borne diseases.

- Cornell University researchers showed that pheromone-treatment could successfully control the grape berry moth in New York vineyards.

- A six-state program in the Northwest has compiled information on low-input cereal/legume cropping and is getting that information out to growers.

- A three-state Midwestern project to organize "citizen groups of farmers" to do on-farm research and demonstrations is developing information on biological and cultural controls for alfalfa weevils, alternative methods of building soil fertility, and alternative crops.

- A Great Plains project is testing "living mulches" to combat soil erosion caused by conventional methods of leaving fields fallow over the hot summer months.

- A Northeast Farmers Network has been formed jointly by the Cooperative Extension in seven states, the Natural Organic Farmers Association, and the Maine Organic Farmers and Gardeners Association. In 1989, the group held a series of farm field days for farmers and Extension agents at which farmers using lower-chemical methods shared information. In 1990, a network of "master organic and sustainable farmers" will hold field days in each state.

These are only a small sample of the more than 75 productive and imaginative projects funded by LISA grants in 1988 and 1989.

In addition to the measurable results, the LISA program deserves high marks for fostering a new model for cooperative research that engages the creativity of farmers in solving their problems and building strong links between farmers, researchers, and extension workers. In project after project, federal extension and research personnel are linked with private non-profit groups and individual farmers in seeking solutions and building networks to share information. This obviously multiplies the effect of federal spending. It leaps over the traditional barriers to transfer of new research information from university stations, creating an enthusiastic support group for new ideas among leading farmers themselves.

More---

Sociologists have long documented the importance of farmer leadership in the spread of new farm technologies. At its seventh annual national symposium held by the Institute here in Washington on March 6, 1990, multiple speakers called for building such cooperative systems for research and education. Active farmers can multiply many times over the extent of research in sustainable agriculture, keynote speaker Roland Bunch of World Neighbors said. Expanded support for the USDA LISA program is the simplest and most effective way to take this idea forward.

This year, the value of the LISA program has been recognized by the Administration, which in its FY 1991 budget proposal asks for $4.45 million in funding instead of recommending, as in previous years, that the program be eliminated. We would suggest, however, that farmers have an urgent need for sound research and information on ways to lower their use of farm chemicals while keeping their levels of productivity high. Continued funding of LISA at only $4.45 million is woefully inadequate in light of both its own track record and farmer needs.

As one sign of the need for LISA-type work, we cite the recent Iowa Geological Survey report which shows that one-third of Iowa's shallow water wells have nitrate levels exceeding national standards--likely a result of contamination by conventional use of nitrogen fertilizers. Upwards of 130,000 Iowans, about 18 percent of the rural population in that state, are drinking water with unacceptably high concentrations of nitrate. More than 94,000 rural Iowans are also drinking water that contains one or more pesticides, the report adds. In response to the reported levels of atrazine in Iowa water wells, the Iowa Secretary of Agriculture immediately called for restrictions on the use of that farm chemical.

It is concern over the loss of access to such farm chemicals along with concerns about degraded water quality and human health effects of using some farm chemicals that fuels the growing interest in alternative farming systems. If the Iowa Geological Survey is any indicator, that concern is likely to increase markedly in the next half-decade. Innovative programs such as the USDA LISA program can go a long way toward providing options for farmers who will need alternatives to present conventional systems.

In agreement with numerous other supporters of LISA, we would suggest FY 1991 funding at the level of $50 million for this program. In choosing that figure, we point to the fact that sound project proposals in each region of the country have been turned away by the regional committees allocating funding. To keep funding for projects already underway but needing long-term support, the Western region stopped soliciting new project proposals in 1990. This choice for a program with so much potential is a significant loss for agricultural producers in that region.

The expanded LISA program would be a regional, multidisciplinary competitive grants research, demonstration, and education program that focuses, as does the present LISA program, on more sustainable agricultural practices and systems. The objectives of this program, include enhanced productivity and profitability, conservation of natural resources, prevention of water quality degradation, promotion of crop diversification, protection of human, animal, and ecosystem health, and enhancement of wildlife habitat.

More---

Of the suggested $50 million funding, we suggest that a significant portion of new funds be used to create a matching grant program that will build a federal-state partnership. A small amount of the total could be used to develop state-specific handbooks and field guides for Extension agents and farmers that incorporate information on such practices as rotations, nutrient management, and biological pest management.

Next, we would like to address briefly the special needs of research in biological pest control for sustainable farming systems. In 1988, the Institute sponsored a national symposium on biologically-based methods of pest control which documented the need for, and potential of, such approaches. (The papers from this symposium have since been published in Volume 3, Numbers 2 and 3, of the **American Journal of Alternative Agriculture**.) However, information from the U.S. Department of Agriculture (USDA) Current Research Information System (CRIS) indicates that the level of effort by the USDA and Land Grant Universities to develop non-chemical controls has significantly declined during the past two decades. For example, in Fiscal Year 1981, there were 535 scientist-years of effort. Concern about the needs for alternative methods of pest control was further heightened by the Board on Agriculture, National Academy of Sciences' report that identified 53 of the 600 agricultural chemicals as known or suspected oncogens. These include 19 insecticides, 17 herbicides, 14 fungicides, 1 bactericide, and 2 plant growth regulators. According to this report, residues of these compounds pose the greatest dietary cancer risk in the followirg commodities: Tomatoes, beef, potatoes, oranges, lettuce, apples, peaches, pork, wheat, soybeans, beans, carrots, chicken, corn, and grapes.

The U.S. Environmental Protection Agency has accelerated its review of a number of these chemicals, and it is anticipated that a number of them will be banned in the relatively near future. Unless alternatives are found, growers in the United States will have great difficulty in protecting fruit and vegetable crops from disease-causing fungi and insects.

Although the Administration's budget requests increased funds for water quality and food safety and for competitive grants in plant sciences, there is no reason to believe that funds from these sources will be allocated to a major thrust on alternative methods of pest control. Yet the need to discover and develop alternatives to chemical pesticides has never been greater. The time has come for the Agricultural Research Service (ARS) and the Land Grant Universities to accelerate their efforts to develop nonchemical controls. ARS should be directed to strengthen its efforts to find alternatives to protect fruits and vegetables from diseases and insects, and to pioneer biological approaches to control cropland weeds. Specifically, research on biological control of fungal diseases, on microbial agents for controlling insect pests of vegetables, on genetically altered insect viruses, and on microbial agents for control of weeds should be greatly accelerated. ARS is currently conducting relevant research at its Beltsville Agricultural Research Center and at a number of other locations. Also, a national technology transfer and information center dedicated to biologically based methods of pest control, operated jointly by ARS and a major university, is needed in order to facilitate the development and use of biological controls.

More---

The appropriation of $5 million dollars to ARS is recommended in order to accelerate the lines of work discussed above. However, ARS should be directed to allocate a significant amount of these funds for extramural projects with universities in order to facilitate the development of strong joint programs. Examples of such joint programs are currently in place in Maryland between the Maryland Center for Agricultural Biotechnology and the Beltsville Agricultural Research Center and in California, where ARS and the University of California are jointly operating the Gene Expression Center.

Finally, we would like to comment on the importance of the Appropriate Technology Transfer for Rural Areas (ATTRA) national hot-line information service that is supported with federal funding and is now located in Fayetteville, Arkansas. This service has conscientiously provided timely and objective information and referrals on low-input, sustainable agriculture, to the Extension Service, farmers, farmer advisors, and others.

During the fall of 1989, I had the opportunity to participate in a formal 1½ day on-site review of this program. I was highly impressed with the quality and dedication of the entire staff, and with the timeliness and objectivity of the information being provided to a broad range of individual producers and agency personnel. I judged the program to be absolutely first-rate in every respect.

This Subcommittee may recall the dispute over location of this service that occurred in the course of the FY 1990 budget hearings, as a result of which funding for continuance of the ATTRA program is now allocated out of funds from the Interior Department, instead of Agriculture. We would like to suggest the importance of continued funding of this effort--recognizing the importance of this service to the agricultural community. Perhaps a joint funding effort would be appropriate. In any case, we urge an appropriation of $3 million.

In closing, we would like to thank the members of this Committee who have in the past three budget years supported funding for the LISA program, overcoming reluctance by the USDA Administration to continue that program. The outstanding results of your support are a sign of your good judgment. The signal sent by federal support of this program is already being reflected in decisions at the state level to create new sustainable agriculture programs, creating a ripple-effect from your action. The foundation world, led by deep concern about the sustainability of our food system, is now also weighing-in on the side of such research and education programs. Substantially increased funding in FY 1991 will multiply these positive effects even further.

Thank you for thoughtfully considering these matters. Your concern for the sustainability of American agriculture is noted and appreciated.

UNIVERSITY OF MISSOURI-COLUMBIA

The Graduate School and Office of Research

Vice Provost for Research
Dean of the Graduate School

210 Jesse Hall
Columbia, Missouri 65211
Telephone (314) 882-6311

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APPNS.CMTE.

March 26, 1990

The Honorable Jamie L. Whitten, Chairman
House Appropriations Committee, Subcommittee on Rural Development, Agriculture and Related Agencies
2362 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Whitten:

The National Initiative for Research on Agriculture, Food, and Environment, proposed by the National Academy of Sciences and the USDA, is arguably the most significant new effort to stimulate research in agriculture and related areas in this half century, perhaps since the Morrill and Hatch Acts. It is based on a thorough analysis of the nation's current ability to address the critical problems it faces in such areas as natural resources and environment, nutrition food quality and health, new products, processes and value-added, and markets, trade and policy. The initiative has captured the attention and gained the support of individuals and groups representing a broad cross-section of society, from scientists to environmentalists, from producers to consumers, from industries to universities. It has already become part of the President's agenda in recognition of its timeliness and importance and now it needs the thoughtful and supportive consideration by Congress.

Despite the importance of agriculture, food and environmental issues to the people of the United States, USDA funding for the critical, basic research in these areas has experienced the lowest rate of growth of any of the federal agencies supporting R&D. In fact, the National Academy of Sciences report indicated that, in real dollars, there has been effectively no increase since 1955. This relative stagnation of funding has prevented USDA-supported researchers from capitalizing optimally on the newest technological advances in biological, physical, engineering, and informational sciences. As a nation, we are finding it more difficult to remain competitive either in terms of our advancement of scientific knowledge in these important areas or in terms of our international position.

The Administration has recommended $100 million for the National Initiative in FY 1991, a substantial move forward, but, I would argue, not far enough. While I recognize that we will have to approach in phases the target

figure of $500 million recommended in the NAS report, the Administration's figure fails to include funds for the areas of new products and processes and of market, trade, and policy and provides only small amounts for natural resources and for nutrition and food quality. Yet these programs are aimed at particularly urgent needs in agricultural competitiveness, environmental concerns and diet-health and food safety issues. The Coalition for Advancement of Research on Agriculture, Food, and Environment (CARAFE) recommends adding funds for these essential programs, bringing the total for FY91 up to $150 million.

Besides providing funds, the proposed grant programs will help improve the balance of funding mechanisms, increasing the proportion of merit-based, competitive awards from 3 to 30% when the initiative is fully funded. This shift will help ensure that projects of the highest quality and relevance will be supported.

As a land-grant university, with a 151-year tradition of responding to the needs of the state, the region and the nation, the University of Missouri-Columbia is committed to the goals and far-sighted programs of the National Initiative. I urge you to support the investment needed to make these programs a reality.

Would you please enter this letter in the record?

Yours sincerely,

Judson D. Sheridan, D.Phil.
Vice Provost for Research and
Dean of the Graduate School

bvc

c: President C. Peter Magrath
Chancellor Haskell Monroe
Provost Lois DeFleur
Dean Roger Mitchell

The FDA Council

ALZA

American Academy of Ophthalmology

American Federation for Clinical Research

American Medical Association

American Social Health Association

American Veterinary Medical Association

Arthritis Foundation

Beecham Laboratories

Bristol Myers Squibb Company

Cambridge BioScience

Candlelighters

Carnation

Cystic Fibrosis Foundation

Genentech, Inc.

Joint Council of Allergy and Immunology

Johnson and Johnson

Merck and Co., Inc.

Monsanto Company

Mothers Of Asthmatics, Inc.

National Multiple Sclerosis Society

National Organization for Rare Disorders

Pfizer, Inc.

The Procter and Gamble Company

Sandoz Corporation

TSI—Mason Research Institute

The Upjohn Company

The FDA Council
c/o Capitol Associates, Inc.
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Washington, DC 20002
202-544-1880 • FAX 543-2565

STATEMENT OF THE

FDA COUNCIL

Before the

HOUSE APPROPRIATIONS SUBCOMMITTEE ON AGRICULTURE, RURAL DEVELOPMENT AND RELATED AGENCIES

On Behalf of

INCREASED FUNDING FOR THE FOOD AND DRUG ADMINISTRATION

Mr. Chairman, Members of the Subcommittee, thank you for the opportunity to present a statement on behalf of the FDA Council, in support of increased funding for the Food and Drug Administration.

The FDA Council is a broad based coalition with representatives from health voluntary organizations, professional societies and industry, who have come together to advocate for the resource needs of the FDA. This is a group that is not always seen advocating on the same side of many policy issues. However, the FDA's ability to carry out its mandate and protect the health and the welfare of each citizen is vital to every segment of society, and this diverse group of organizations speaks with unison in urging this Subcommittee to make the resource needs of the FDA a top priority. The resource needs of the Agency are clear cut -- personnel, training, facilities, equipment and instrumentation.

We thank the Subcommittee for the support that the FDA received last year (FY90). It was an excellent start on re-vitalizing the Agency and preparing it to meet the 21 Century. Unfortunately, we are back again this year, to re-iterate concerns and request your support.

Over the past decade as a result of the expansion of the FDA's authorities, there has been a very serious erosion of resources within the Agency. In fact, Chairman Dingell was quoted in a December 4, 1989, New York Times article saying that the cutbacks within the FDA have "represented a slow, persistent strangulation of the Agency."

The constraints which the Agency faces in all areas are almost intolerable, and may ultimately force the FDA to choose between the types of regulatory services it provides for us. Resources to safeguard the foods we eat -- our fruits, vegetables and seafood - are being pitted against our ability to approve drugs to alleviate chronic illnesses, or provide relief for persons who suffer from rare or life threatening diseases. Unless we continue to build upon your efforts last year to address these crucial needs, we are taking risks with the public health and welfare of our citizens.

The members of the FDA Council were pleased that the Administration's Request included increases in funding for many high priority needs at the FDA, including the following.

* AIDS
* New Drug and Device Review
* Generic Human Drug initiatives
* Field restoration and forensic capabilities
* Food safety and monitoring initiatives
* Support of the National Vaccine Program

However, we believe that the Budget Request falls short in several high priority areas. Therefore, **we request that you provide the Food and Drug Administration with an appropriation of $730 million.**

This is a $45 million increase above the 1991 President's Budget Request. This increase would be used to address the initiatives outlined below, which are crucial to the operation of the Agency and were not included in the President's Request.

* Repair and renovation of existing facilities until the consolidated facility is available.
* Equipment and instrumentation for FDA laboratories, field research sites, and data management systems.
* Training programs to develop a cadre of regulatory reviewers to provide for future needs of the FDA.

Last year, a GAO Report was released outlining many of the problems within the Agency. While the Report did little to recommend action to alleviate these crucial problems, it did bring to light several important facts which we would like to re-iterate here for you.

Personnel

Let us begin by clearly stating our gratitude for the hard work of the individuals at the FDA. The demands of their jobs are significant and it is because of their commitment and dedication to the mission of the FDA that the Agency has met its formidable challenges. However, they have done so under circumstances that would not be tolerated in most successful corporations throughout this Nation.

The GAO analysis of the personnel situation at the FDA, based upon data from the FDA and the Office of Personnel Management, has indicated that serious problems exist with regard to attrition of FDA personnel when compared to other Federal agencies. Attached is a copy of a chart which clearly demonstrates that the turnover rate of the following FDA employees -- biologists, engineers, statisticians, microbiologists, pharmacologists, physicians and veterinarians -- is far in excess of the rate in other government agencies.

The FDA has had one senior position vacant since 1983, and others have taken six months to two years to fill. We believe that this is only a predictor of the future, as close to three-quarters of the Agency's senior staff will be eligible for retirement by the mid-1990's. Unless we address the disincentives which exist within the Agency to attract top level scientific staff now, the FDA will face serious deficits within the next several years.

It is estimated that a **minimum of 900 new FTE's** is required to address the programmatic needs at the FDA. This recommendation is included in the 1991 President's Budget Request. We believe that the severe personnel shortages within the Agency have caused many delays in the review of health products. High priority programs which will require **additional scientific staff** with expertise in program areas and **training** of new and existing FDA personnel are outlined below.

* Cancer Drug Development
* Drugs to treat HIV infection
* Biologic agents and immune modulators to treat diseases like cancer and other immunosuppressive disorders
* Antiviral agents
* Biotechnology
* Drugs to treat opportunistic diseases associated with immunosuppression caused by cancer, immune disorders and AIDS
* Radioimmune assays and radio-diagnostic agents
* Novel vaccine compounds
* Food substitutes
* Veterinary agents

We urge you to support the requested increase in personnel so that the FDA can begin to stabilize its programs and address the crucial regulatory issues at hand.

Facilities repair and restoration

The GAO has estimated that current FDA space is only 75% of the recommended allocation per employee. To address this issue, this Subcommittee has already laid the groundwork to improve the working conditions of FDA employees. In the 1990 appropriation, funding was made available to proceed with the engineering and design of a consolidated facility to bring the employees presently housed in 23 separate facilities under the same roof.

However, while plans for the consolidated facility are progressing, it will be necessary to provide for repair and renovation of existing facilities to enable FDA staff to occupy present office and laboratory space until the consolidated facility is completed, several years down the road. Therefore, funds are needed in FY 1991 to support the following.

* Rehabilitation and repair of existing buildings to bring laboratory space into compliance with Federal regulations.
* Funding for completion of the construction of the FDA AIDS building.
* Repair of facilities to meet safety requirements and provide routine maintenance to ventilation systems, air conditioning equipment and electrical equipment such as elevators.
* Minor renovations to maximize existing office space for FDA personnel.
* Upgrading of field facilities.

Equipment and Instrumentation

In FY 90, funding was made to the Agency to begin an automated system for product review. In order to increase the efficiency of product review within the Agency, additional resources are necessary to fully convert all aspects of the FDA to a data management system.

Equipment needs extend beyond this area. It is estimated that approximately 29% of the scientific equipment is out of date and should be replaced. The FDA is responsible for reviewing and approving cutting edge technology -- whose sophistication will only increase over the next decade as our investment in molecular biology pays off in terms of product development. In order to meet the challenge of this technology, it is imperative that the Agency be as state-of-the-art and advanced as the industry which it regulates.

Training

In the past decade, advances in molecular biology have lead to a revolution in the conduct of research and the development of technologies translating our research efforts into the hands of consumers. In the next decade, it is anticipated that substantial research progress will double the number of product reviews, from 15,000 to 30,000, at the FDA.

These advances mandate that the FDA have the resources for two important training programs -- one that addresses the training needs of current FDA staff to assist in recruitment and retention, and one that addresses the training of extramural researchers in regulatory review.

The pace of science is moving so fast that the FDA must have funding to support its scientists in their educational efforts. This includes not only educational programs within the FDA, but also educational opportunities offered by professional societies to keep abreast of cutting edge research. If we fail to help these important scientists keep their knowledge and expertise current, it will be reflected in inadequate regulation of the industry or delays in the review of important product applications.

Further, the FDA needs to address the critical problem of training a cadre of experts within the scientific community. This April, the NIH and the FDA will embark on an excellent prototype of a program -- to train researchers in clinical trials, and regulatory review. The NCI's Pediatric Oncology Division and the FDA have established a joint fellowship program which will allow clinical researchers to spend 60% of their time at the NCI conducting clinical trials, and 40% of their time over a three year period learning aspects of regulatory medicine. This type of training is crucial in assure that tomorrow expert staff will be available to the FDA to support its program needs. We urge you to take this program under serious consideration and support similar efforts for other diseases, such as AIDS, Alzheimer's, and cardiovascular disease.

User Fees

The FDA Council is opposed to the concept of users fees included in the 1991 President's Budget Request and recognizes this Subcommittee for its efforts in previous years to reject this proposal. We believe that the implementation of such a proposal could significantly compromise the FDA and urge you to fully restore the $157 million by providing a direct appropriation to the FDA in that amount for the following reasons.

* If the Food and Drug Administration is statutorily required by the President and the Congress to protect the health and welfare of Americans, the requisite Federal funding should be made available to carry out this mandate.

* Funding by a regulatory Agency by the regulated industry is a conflict of interest.

* Requiring payments related to FDA review of new products is a tax on research and development which will in all likelihood be passed off to the consumer. Further, a tax on innovation at a time when our competitiveness in this and many other arenas is under question will not provide incentives to companies to develop technologies.

* The amount of revenue which could be brought into the Treasury under this proposal is unclear, as the FDA, CBO and CRS do not have any clear data with regard to the number of pharmaceutical, medical device and food and cosmetic plants which exist or product applications which will be received in FY 1992.

* The program is not presently authorized and could not be authorized in a timely fashion to impact the operating budget of the FDA in FY 91.

* The is clearly a substitution for appropriations, as the proposal does not bear any relation to the cost of product review.

Mr. Chairman, Members of the Subcommittee, we recognize that you have many competing demands and many worthy programs to address in your deliberations. We believe that the safety and welfare of the American public should be placed at the top of this list, as the measure of greatness of a Nation is depended upon the health and welfare of its citizens. Thank you for the opportunity to present our statement to you.

LEAVING IN DROVES?

The quit rate of Food and Drug Administration employees as compared to the quit rate of workers government-wide. Figures do not include retirements or resignations.

	Fiscal 1985		1986		1987	
	FDA	Gov't.-wide	FDA	Gov't.-wide	FDA	Gov't.-wide
Biologist	5.7%	1.9%	1.9%	1.7%	8.0%	2.1%
Biomed chemist	12.5	4.3	12.5	6.0	3.7	4.5
Engineer	1.3	2.3	2.5	2.4	3.1	2.7
Statistician	2.1	4.0	6.7	3.7	6.3	2.1
Medical officer	5.4	4.8	10.8	5.2	3.2	5.9
Microbiologist	1.1	2.5	2.1	2.3	3.9	3.4
Pharmacologist	0.9	2.0	0.8	1.6	9.6	4.6
Physicist	0.0	2.6	7.4	2.4	4.0	1.9
Veterinarian	1.7	1.4	0.0	1.7	2.0	1.6

Source: General Accounting Office analysis based on Food and Drug Administration and Office of Personnel Management data

National Turkey Federation

SERVING THE NATION'S TURKEY INDUSTRY

11319 Sunset Hills Road, Reston, Virginia 22090-5205

Stuart E. Proctor Jr., Executive Vice President

703 435-7206
FAX 703 481-0837

April 2, 1990

The Honorable Jamie L. Whitten
U.S. House of Representatives
2314 Rayburn HOB
Washington, DC 20515

Dear Chairman Whitten,

As a follow up to our March 22, 1990 letter we sent you seeking assistance in obtaining research funds for Osteomyelitis in turkeys, we respectfully request the enclosed statement on USDA's Agriculture Research Service budget be included as a part of the official subcommittee record.

We appreciate your help in this matter and if we may be of some assistance to you, please don't hesitate to call on us.

Sincerely,

Stuart E. Proctor Jr.

Stuart E. Proctor Jr.
Executive Vice President

Wyatt Upchurch, President
Bruce Cuddy, Secretary Treasurer
Gary Ruka, Vice President
John Wickliffe, Immediate Past President

National Turkey Federation

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OFFICIAL STATEMENT

OF THE

NATIONAL TURKEY FEDERATION

SUBMITTED

TO THE

HOUSE APPROPRIATIONS SUBCOMMITTEE

ON

RURAL DEVELOPMENT, AGRICULTURE AND RELATED AGENCIES

APRIL 2, 1990

Introduction:

Turkey Osteomyelitis Complex (TOC) is a musculoskeletal infection which is found in turkeys throughout the United States. Osteomyelitis (OM) is an inflammation of the bone which may be caused by a variety of organisms. Losses to the turkey industry amount to approximately $10 million per year. This does not include 1-2% culls left on the farm and decreased processing efficiency. Losses are incurred by growers and processors.

The National Turkey Federation requests that Congress specifically authorize $400,000 for OM research in the USDA ARS FY 1991 budget. NTF represents most of the nation's turkey growers and processors and accounts for more than 95 percent of the nation's commercial turkey production and marketing.

Background

On August 14, 1988, the Food Safety and Inspection Service (FSIS), USDA instituted a program to inspect turkey carcasses with green liver discoloration for TOC because of food safety concerns about the presence of Staphylococcus aureus, the most frequently recovered organism from TOC. Turkey osteomyelitis complex consists of any inflammatory legion of the musculoskeletal system, including osteomyelitis, synovitis, arthritis, myositis, and tendonitis. Turkeys with TOC usually have concurrent green liver discoloration and TOC is usually caused by Staphylococcus, a potential human pathogen.

During the first eighteen months of the program, over 1.6 million of a total of 349 million carcasses were retained for TOC examination. Of the 1.6 million carcasses retained, only 543,525 (33%) had some evidence of TOC. Conversely, of carcasses retained for TOC examination 796,040 (65%) had no evidence of TOC. Conservative estimates of annual product loss alone in the turkey industry have been put at $10 million. This does not include an increase of 1-2% culls in tom flocks left on the farm and not processed due to lameness. Decreased processing efficiency results in additional economic losses.

Losses from TOC could be reduced in two ways: 1) increase accuracy of identifying TOC positive carcasses among those with green liver discoloration, and 2) reduce the number of turkeys with green liver discoloration (with or without TOC) being processed. Knowledge about causes of green liver discoloration and TOC, and how they may be prevented is unavailable because the problem has only recently been identified. The purpose of the proposed ARS research will be to obtain information on this newly recognized, economically significant food safety and quality problem in the turkey industry.

28-669 O—90——41

Current Research

Three preliminary studies have been conducted in collaboration with the National Turkey Federation. While there have been some positive results additional research is needed to accurately identify, prevent, and control this disease. This is a national problem which needs national attention including research assistance from USDA.

USDA's Agricultural Research Service (ARS) estimates it would take two staff researchers to be assigned to an OM project to accurately identify the cause, prevention, and control. ARS estimates a cost of $400,000 per year. The study should focus on identifying the causes of OM; improving the accuracy of detecting OM birds and preventing the occurrence of OM.

COALITION ON FEDERAL AGRICULTURAL RESEARCH MISSIONS

COFARM

1325 Massachusetts Avenue, NW
Washington, DC 20005
(202) 737-3600

April 4, 1990

Congressman Jamie L. Whitten
US House of Representatives
Washington, DC 20515

Dear Congressman Whitten:

On behalf of the Coalition On Federal Agricultural Research Missions (COFARM), we are pleased to enclose a copy of our statement on the FY 1991 agricultural research budget. The statement has been submitted for the record to the House Appropriation Subcommittee on Rural Development, Agriculture and Related Agencies. This copy is for your information.

COFARM is a broadly based coalition which supports the sustained investment in agriculture research. We hope to continue these efforts in the years to come.

If you would like additional information, please contact Martin Hight at the American Society for Microbiology at 202-737-3600.

Sincerely,

COFARM Steering Committee

Enclosure

STATEMENT OF THE

COALITION ON FEDERAL AGRICULTURAL RESEARCH MISSIONS

to the

Subcommittee on Rural Development, Agriculture
and Related Agencies
of the
Committee on Appropriations
U.S. House of Representatives

1325 Massachusetts Avenue, NW
Washington, DC 20006

28-669 2746

(COFARM) is a broadly based coalition united by a commitment to sustained investment in the nation's capacity to produce quality food and fiber in an economically competitive manner which conserves resources and preserves the environment. The coalition's aim is to ensure that the scientific and technological data base which is necessary to achieve these aims is provided for in a timely manner which ensures competitiveness with producers from abroad. Members include scientific and professional societies with over 100,000 members actively engaged in research. Many of these members are engaged and/or trained in agricultural research.

American Dairy Science Association
American Institute for Biological Sciences
American Meat Science Association
American Society for Horticultural Science
American Society for Microbiology
American Society of Agronomy
American Society of Animal Science
American Society of Plant Physiologists
Crop Science Society of America
Federation of American Societies of Food Animal Sciences
Institute of Food Technology
Poultry Science Association
Soil Science Society of America

The **C**oalition **O**n **F**ederal **A**gricultural **R**esearch **M**issions (**COFARM**) is a broadly based coalition united by a commitment to sustained investment in the nation's capacity to produce quality food and fiber in an economically competitive manner which conserves resources and preserves the environment. The coalition's aim is to ensure that the scientific and technological data base which is necessary to achieve these aims is provided for in a timely manner which ensures competitiveness with producers from abroad. Members include scientific and professional societies whose 128,000 members are actively engaged in research. Many of these members are engaged and/or trained in agricultural research.

GOALS

- Strengthen the Agricultural, Food and Environmental System to meet the challenges that confront U.S. agriculture on a global scale.
- Provide the fundamental research needed to overcome technical barriers to achieve and speed up the momentum for using the latest advances in science to benefit the U. S. agricultural system.

AIMS

- Ensure strong economic performance from agriculture.
- Provide the technology base that is necessary for the development of new products, new processes and value-added products derived from agricultural materials.
- Improve and design food products which are highly nutritious and of high consumer quality to provide enhance the well-being of our citizens.
- Ensure safety of foods.
- Understand and develop macro-economic policies which permit U.S. agriculture to remain competitive in world markets.
- Provide for the human resources and infrastructure for agricultural research.
- Sustain and enhance the natural resources by developing new scientific and management techniques for agricultural production.
- Advance the fundamental knowledge of plants and animal systems to provide the technological base to supply broad program areas

ACTION

COFARM strongly endorses these aims and urges Congress to implement the recommendation of the National Research Council's, Board of Agriculture, "Investing in Research: A Proposal to Strengthen the Agricultural, Food and Environmental System" by appropriating $500 million in new monies for FY 1991 for the USDA's Competitive Research Grant Program.

THE RETURN ON INVESTMENT FROM AGRICULTURAL RESEARCH

The nation's investment in agriculture has produced a system of agriculture that provides cheap, wholesome food and fiber for its citizens. U. S. citizens work fewer hours to pay for food than anywhere else in the world. There are no lines in the U.S. for agricultural commodities. The return on prior investment in research in agriculture continues every hour of every day. It has produced the Green Revolution.

New technological developments in the Basic Biological Sciences hold the promise for advances in agriculture that will equal or may well surpass those generated by the Green Revolution.

A few examples:

Transgenic plants have been produced in which the genes for nontoxic biological pesticides from bacteria have been incorporated into target plants and appear to be effective.

Swine which have been transfected with genes for specific proteins grow faster and have a lower back fat content.

Transgenic fish have been produced that grow at a faster rate.

Cotton fibers have been produced in the laboratory by plant cells in tissue culture.

However, despite these significant achievements in our fundamental and practical knowledge of plant and animal systems, there are many technical barriers that must be overcome to achieve and speed up the momentum for using these latest advances in science.

A few examples of the technical barriers that require fundamental research are:

Development of alternative vector systems for incorporating desired genes into plants.

Identification of tissue specific promoters for plant cells.

Development of marketing strategies for locally derived, small businesses that develop value-added products.

Identification and development of pollution prevention practices for agriculture.

Understanding of how animals partition nutrients to produce leaner or higher quality products.

THE ERODING LEAD

The technology lead that the U.S. has in agriculture is eroding. Many countries have implemented agricultural practices developed in the U.S. and have become self-sustaining in their food production. Exports are declining. The U.S. has become a net importer of processed foods. New discoveries in the biological sciences promise significant improvements in the production, quality and safety of food products. Many countries, including some developed and most developing nations, have recognized and invested in that potential. They are gaining the capacity for expanded production and lower per unit cost for agricultural products.

The consumer in the U.S. is seriously questioning current agricultural practices that involve the use of pesticides and affect water quality. New regulations in these areas may negatively influence yield and unit cost of food and fiber production.

The international and national signals must not be ignored. New technology must be developed if the U.S. is to remain the leader in agriculture. This can only be ensured by an enhanced investment in fundamental food and agricultural research.

PROFILE OF AGRICULTURAL RESEARCH

A recent publication by the National Science Foundation "Profiles-Agricultural Sciences: Human Resources in Funding" (NSF89-319), summarizes the current status of trained agriculture scientists. Twenty-five (25%) percent of the agricultural scientists in this country are over 50 years of age as compared to twenty (20%) for all other life sciences. Twelve percent (12%) of the agricultural scientists are between the ages of 40-49 compared to twenty-four (24%) of all other sciences. Agricultural science has a much higher age profile and many will retire soon. These statistics indicate there will be a shortage of agricultural scientists for the positions in federal, academic and private research laboratories. They also indicate that a high proportion of present day agricultural scientists have not been trained in modern technologies. This situation must be rectified. The scientific equipment and infrastructure necessary for performing research in agricultural sciences also needs to be modernized.

Although agriculture accounts for assets in excess of $1.039 trillion per year in exports, it comprises only 3.22% of the total federal research budget in science.

It was estimated that in 1988, $679.8 million was expended on research by the USDA. Only $39.9 million of that total or 5.9% was expended on fundamental research via the competitive grant program. Ninety-eight percent (98%) of all fundamental research in agriculture was funded by the USDA.

When the Competitive Research Grants Office (CRGO) was funded in 1978, the recommendation was for $40 million per year. It was legislatively capped at $70 million per year. If the 1978 $40 million recommended level is adjusted using the BPRDI, then the level of funding for FY 1991 should be over $81 million. In the twelve year history of the program, it has never been funded at the level recommended in 1978 (Figure 1). Lack of adequate funding for fundamental research in agriculture is the prime reason that the United States's lead in agriculture is eroding. CRGO has never been adequately funded (Figure 2). Each year's requests far exceed the dollar amount available. The National Research Council has published numerous studies that detail the the lack of knowledge in basic plant and animal systems. This lack of knowledge impedes advances in agriculture.

Agricultural research and development is conducted by the Agriculture Research Service (ARS), universities, the State Agriculture Stations, U.S. Forest Service, Economic Research Service and private industry. In 1986, federal funding comprised about 44% of the funding and private industry about 55%. Total funding was $4,432.2 million. Only a small proportion of that total was on fundamental research on agriculture. It is probable that this total is less than 5% of the total amount spent on R & D. The level of funding for fundamental research is the weak link in the agricultural system. The amount expended on agricultural R & D is far below the level expended for research by either HHS, NSF, DOE, DOD or NASA (See Table 1). The needs and challenges of agriculture research cannot be met with present levels of funding for agricultural research. An investment in the future for agriculture to strengthen the agricultural food and environmental system must be made.

MANAGEMENT OF THE NRC INITIATIVE WITHIN USDA

Since 1978, and despite low budgets, the Competitive Research Grant Office (CRGO) has performed in exemplary fashion. It has proven that it manages the competitive grants for agriculture in a fair and unbiased manner. It has also been shown in all facets of federally funded fundamental research, that competitive grants have been shown to be the vehicle that provides research ideas and the mechanism to produce highest return for money expended. COFARM is in agreement with the National Academy of Sciences recommendation that an INITIATIVE in fundamental research in agriculture should reside in CRGO (see page 87 of the NRC report) and that CRGO should be elevated as the fourth major Science and Education Agency within the USDA when the NRC Initiative is funded.

Administration of CRGO should be on an equal footing with the administration of the Agricultural Research Service (ARS), the Cooperative State Research Service (CSRS), and the Extension Service (ES). We believe that a fourth agency is an absolute requirement if the integrity of the Initiative proposed by the NRC is to be maintained. The administrator of CRGO must have the freedom to administer the content of the program. The priorities must be made utilizing the input from the entire scientific community if the opportunities, needs and challenges of agriculture are to be met. This can only be accomplished if the content is to be reflective of national priorities and is not subjugated to the missions of other agencies within USDA's Office of Science and Education.

However, it is absolutely necessary that the initiative within CRGO be coordinated with the needs of other agencies within USDA. It should be possible to accomplish these ends since CRGO has the prime (but not the sole) responsibility for fundamental agricultural research; CRS would be responsible for satisfying local and state needs; ARS for development of agricultural needs and specific target mission; and ES and CSRS for technology transfer. It should also be possible to coordinate the program and make certain that ARS, CSRS, and ES bench scientists serve on appropriate program panels as is currently practiced. Additionally, ARS and ES scientists should be permitted to compete for CRGO research grants as is currently practiced.

THE PROMISE OF FUTURE INVESTMENT

- A better understanding of plants and animals which will provide the basis for increased competitiveness of US agriculture.
- High quality nutritious and safe foods.
- An adequate food supply to meet markets and expanding population needs.
- Newer, faster and more accurate techniques to assess the microbial, chemical and nutritional quality of foods.
- Funding the Initiative at the recommended level would provide for the training of agricultural scientists.
- Conservation of soil, water, and forest for future generations.
- Sound basis for marketing and trade policy.

THE USDA FY 1991 BUDGET REQUEST FOR THE NRC INITIATIVE

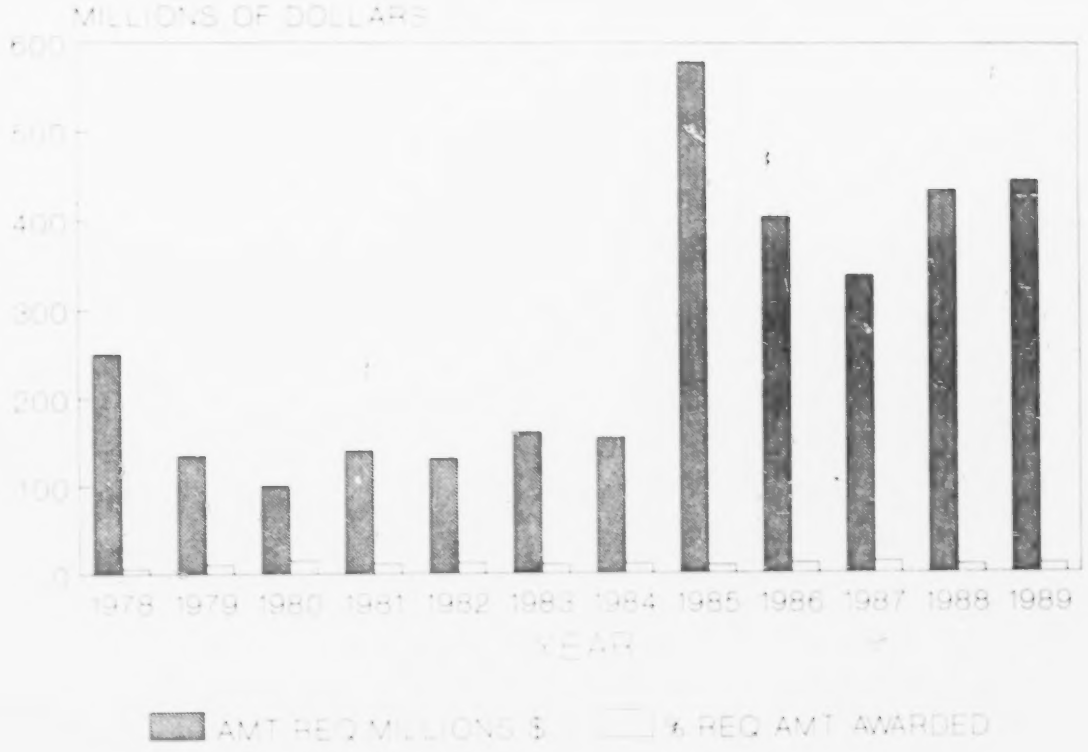
The COFARM urges Congress to invest in strengthening the Agricultural, Food and Environmental System to meet the challenges that confront US agriculture on a global scale.

We recommend that the full $500 million in new monies recommended by the NRC be appropriated for FY 1991. We do not believe that the $100 million suggested by the Administration is adequate. The Adminstration's request assumes the burden in all of the six research areas that the Board of Agriculture recommended without any real increase in budget. We have calculated that if the current competitive grants program was funded at the same level as NSF, it would require approximately $90 million.

Additionally, the Administration has earmarked $15 million of the $100 million dollars that they have proposed for FY 1991 for research on a plant genome program. This is a new program suggested in the Administration's budget which was not included in the NRC initiate. If indeed the plant genome project is a high administrative priority, an additional $15 million should be appropriated for that project.

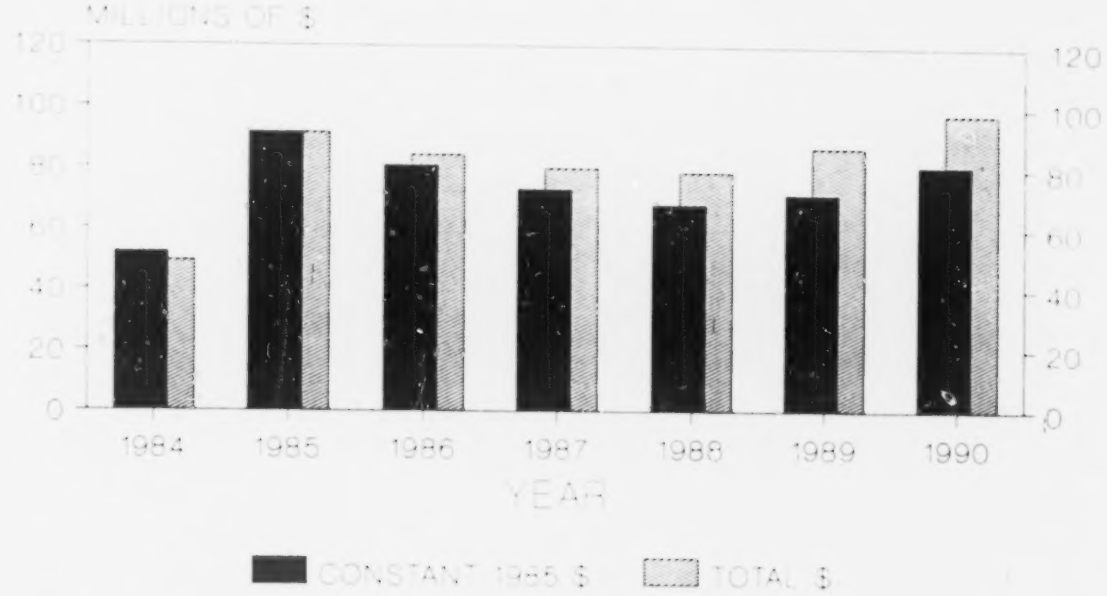
We urge the Congress to not only embrace the goals of the NRC Initiative, but to fund it at the level that is necessary, i.e. $500 million in new monies.

FUNDING PRACTICES IN CRGO (FY 1978-1989)



SOURCE: USDA

HISTORY Of CSRS FUNDING
TOTAL RESEARCH GRANTS (1984-1990)



ADJUSTED WITH NIH BRDP
INCLUDES CRGO, SPECIAL, FORESTRY &
ANIMAL TRAINING GRANTS

1290

TABLE 1

Comparison of funding of Biological Research in the
U.S. Department of Agriculture, National Science Foundation
and National Insititutes of Health

(FY 1989)

	USDA[a]	NSF[b]	NIH[c]
Number of Proposals	1,408	5,224	19,534
Number of Grants Funded	324	2,246	5,382
Percent (%) of Proposals Resulting in Grants	23.0%	43.0%	27.6%
Amount Requested (Dollars in Millions)	$445	$1,648	$2,750[d]
Amount Awarded (Dollars in Millions)	$44.5	$166	$982.4[e]
Percent (%) of Requested Amount Awarded	10.0%	10.0%	NA
Average Amount of Award (Dollars in Thousands/Year)	$59.9	$74.0	$195

[a]USDA - Data for competetive grants but does not include training grant

[b]NSF - Data from the cellular, molecular and biotic systems and resources biosciences division, directorate for biological, behavioral and social sciences, NSF

[c]NIH - Data for total NIH

[d]Direct Costs

[e]Direct + Indirect Costs

Source: USDA, NSF and NIH

NATIONAL ASSOCIATION OF STATE
N.E.T. PROGRAM COORDINATORS

c/o NET Program, State House Station 136, Augusta, Maine 04333

President

Sheila Terry
(301) 333-2600

President-elect

Lynn Hoggard
(919) 733-3906

Secretary/Treasurer

Carol Phillips
(608)267-9120

Legislative Coordinator

Judith Cogburn
(207) 289-5315

March 28, 1990

The Honorable Jamie Whitten
2314 RHOB
United States House of Representatives
Washington, DC 20510

Dear Representative Whitten,

I am writing to you on behalf of both the Society for Nutrition Education and the National Association for State Nutrition Education and Training Coordinators (NASNET) to ask you to include the following written testimony in the hearing record.

This testimony supports an increase in appropriations for the Nutrition Education and Training (NET) program, to match the reauthorization funding levels established this fall in PL 101-147. The NET program can no longer meet the needs of the people because its funding has not kept pace with the cost of living increases. NET has not had an increase in funds for over eight years!

We respectfully ask for your support.

Sincerely,

Judith B. Cogburn, MBS, RD
Past-President, NASNET

JC:lmw

enc

cc: members, Rural Development, Agriculture and Related Agencies Subcommittee

TESTIMONY OF

THE SOCIETY FOR NUTRITION EDUCATION

AND

THE NATIONAL ASSOCIATION OF STATE N.E.T. COORDINATORS

FOR THE

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

UNITED STATES HOUSE OF REPRESENTATIVES

PREPARED BY:
JUDITH B. COGBURN
PAST-PRESIDENT, NASNET
SNE, MEMBER

MARCH 28, 1990

The Society for Nutrition Education and the National Association of State Nutrition Education and Training (NET) Program Coordinators have made the continuation of an adequately funded Nutrition Education and Training (NET) program one of their highest priorities. We appreciate the leadership which this Committee has given to nutrition programs over the years. We know that nutrition education is a vital component of the Child Nutrition Programs.

Last year the National Education Association (NEA) released a report prepared by the Food Research and Action Center (FRAC) called The Relationship Between Nutrition and Learning. In the introduction the President of NEA said "Growing numbers of our students are coming to school burdened with disadvantages. More are poor and, because of poverty, more are ill-fed. To help these students succeed in school, we must not only have high academic standards, but we must deal with the students' needs. Children cannot learn if they are malnourished or if they are too poor to have enough to eat." This NEA report cites research findings which indicate that hunger leads to nervousness, irritability and disinterest; that skipping breakfast often causes nausea, dizziness, headache and fatigue in the morning; and that the hungry child is passive, apathetic and timid. Malnutrition is happening in our economically advantaged homes, not just in our poorer homes. In our "fast-moving" society today there are kids who are hungry or malnourished because their parents are so busy with their jobs that they do not have time to grocery shop or to prepare the kind of nutritious meals that they received as a child. There are elementary school aged "latchkey kids" responsible for meal preparation for their entire family. There are children whose breakfasts consist of what they can grab from the counter or refrigerator as they go out the door to school.

For the last 10 years, the NET Program has addressed these matters. Now the NET program needs your help. This vital, cost-effective health promotion and disease prevention program is in dire need for an increase in funds. Federal funding of the NET Program was reduced from $26,000,000 in 1978 to $5,000,000 in 1982, where it remains in FY'90. Thus NET currently receives one-fifth of its original funding.

This past fall, realizing that NET could no longer operate at its 1982 appropriations level, Congress increased NET's reauthorization funding level. PL 101-147 reauthorized the NET Program at an increased level for each of five years. For FY'91 NET has been authorized to receive $15,000,000, yet only $5,000,000 has been set aside for NET in President Bush's budget proposal.

The costs to operate and maintain NET programs throughout the country have increased steadily since 1982, diminishing NET's accomplishments as the appropriations remained unchanged. An increase of $10 million would allow NET to reinstate some of the college-level nutrition courses for teachers and school food service personnel that it was once able to offer. Nutrition curricula for preschool through grade 12 would be updated to reflect the current knowledge of the scientific and educational communities regarding nutrition, knowledge that has changed significantly in the past decade.

The NET program is equipped to educate our children, teachers and food service personnel as well as parents about nutrition. NET is a family nutrition education program. It fills the gap between WIC and Meals on Wheels. NET funds have been used to produce specialized nutrition materials and educational programs for handicapped individuals, pregnant teens, students athletes and

coaches. In addition, it has provided training to teachers, children, parents and food service personnel in child care programs through the twelfth grade. NET programs throughout the country have achieved remarkably impressive accomplishments despite limited funding such as the development of:

* the highly-acclaimed California "Choose Well-Be Well" nutrition education curriculum guide now used world-wide,
* the Emmy Award winning television series "High Feather" developed in New York State, and
* the Pennsylvania School Breakfast Campaign especially targeting "high-risk" youth, destined to become a national model.

A 1985 investigation into the effectiveness of nutrition education, conducted by the University of Minnesota for the National Dairy Council and published by the Society for Nutrition Education, resulted in three major findings. The first is that nutrition education results in a marked increase in knowledge in nutrition. The second is that nutrition education results in some increase in positiveness of attitudes toward eating nutritiously. The third is that nutrition education results in constructive changes in participants' patterns of food consumption. Thus, this study confirmed what we in the NET program have demonstrated time and again, that nutrition education works!

These successes notwithstanding, there is still much to be done. Because of the decreased funding in recent years, we have been unable to reach large segments of the school population. The program now reaches only 85,000 teachers, 67,000 food service personnel, and 2.2 million students as compared to the 211,000 teachers, 103,000 food service personnel, and 5.6 million students

reached with the original funding level.

The public's interest and concern regarding the nutritional quality of school lunch meals cannot be overlooked. Now more than ever, our schools need the NET program to provide leadership and guidance in the form of nutrition education and training to the school food service personnel. This training needs to be expanded so that all children can have access to high quality, nutritious meals.

Our two organizations, SNE and NASNET are jointly asking you to increase the appropriation levels for the NET Program to equal those established in PL 101-147. We ask you to consider increasing the funding for this essential program to $15,000,000 for FY'91. These additional funds will ultimately result in a cost savings to this country, for we believe that health care costs will decrease as healthy food habits are established.

NUTRITION EDUCATION & TRAINING

FACT SHEET

- Although increased funds were **authorized** for the Nutrition Education and Training (NET) Program, they were **not appropriated** for fiscal year 1990, and NET continues to be funded at the reduced level of $5 million.

- As the educational component of the Child Nutrition Programs, NET is dedicated to improving the nutrition knowledge of teachers, school food service personnel, and children of all ages. It is a health promotion and disease prevention program.

- The National Academy of Sciences Report, "Diet and Health: Implications for Reducing Chronic Disease Risk," released in 1989, states the need for massive education efforts and appropriate educational tools to motivate the public to change its dietary habits.

- "The Surgeon General's Report on Nutrition and Health," released in 1988, emphasized the link between diet and its relationship to the leading causes of death and disability among Americans. This report states that educating the public about dietary choice is essential, and educational efforts should begin in primary school and continue throughout the secondary grades.

- Public Law 101-147 reauthorized and extended the NET Program through fiscal year 1994. It authorized to be appropriated:

  - $10 million for fiscal year 1990
  - $15 million for fiscal year 1991
  - $20 million for fiscal year 1992
  - $25 million for each of the fiscal years 1993 and 1994

  These increased funds were not appropriated.

- NET was originally funded at 50 cents per child or $26 million. States now receive less than 10 cents per child or $5 million. Public Law 101-147 **authorized** a gradual restoration of funds back to the original level of 50 cents per child. So that this restoration may actually occur, an **appropriation** of $15 million is needed for fiscal year 1991.

- Public Law 101-147 requires the U.S. Department of Agriculture to publish dietary guidance and it requires schools to implement the guidance. The increased NET funding is essential to provide the training needed to carry out the provisions of this law. Additionally, with the $15 million authorized for fiscal year 1991, NET services would be expanded to include nationwide nutrition education, food service, and health education workshops, onsite consultant and training services, and increased parent involvement.

- During its history, NET funds have been used for:

  - training programs for teachers and food service personnel
  - training for child nutrition personnel from child care programs through twelfth grade
  - nutrition curriculum for preschool, primary and secondary students
  - training videos for a variety of audiences
  - public service announcements to promote good nutrition and school meals
  - computer software to teach nutrition and analyze menus

- Specialized NET materials and programs have been developed for populations such as adolescents at risk, pregnant teens, athletes, handicapped individuals, and parents.

NET BRINGS EFFECTIVE NUTRITION EDUCATION TO OUR NATION'S CHILDREN

Funded by Nutrition Education and Training Program, State Coordinators

Chesapeake Bay Foundation

"Environmental Defense - Environmental Education - Land Conservation"

162 Prince George Street • "The Church" • Annapolis, Maryland 21401
301-268-8816 (Annapolis) 269-0481 (Baltimore) 261-2350 (Washington, D.C.)

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Virginia Executive Director

Pennsylvania Executive Director

March 29, 1990

APR 03 1990

The Honorable Jamie L. Whitten, Chairman
Subcommittee on Appropriations for Rural
Development, Agriculture, and Related Agencies
U.S. House of Representatives
Rayburn House Office Building, Room 2314
Washington, D.C. 20515

Dear Chairman Whitten:

Enclosed is a brief statement submitted in behalf of the Chesapeake Bay Foundation for inclusion in the record for the hearings on USDA's FY 1991 appropriations bill.

Consideration of our request by you and the members of your committee would be greatly appreciated.

Sincerely,

William C. Baker
President

WCB:cs
Enclosure

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APR 03 1990

APPNS CMTE.

STATEMENT OF WILLIAM C. BAKER, PRESIDENT
CHESAPEAKE BY FOUNDATION
SUBMITTED TO THE SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE,
AND RELATED AGENCIES
COMMITTEE ON APPROPRIATIONS
UNITED STATES HOUSE OF REPRESENTATIVES
MARCH 29, 1990

The Chesapeake Bay Foundation (CBF) is a nonprofit organization dedicated to the protection and restoration of the Chesapeake Bay and its resources. CBF has offices in Annapolis, MD, Richmond, VA, and Harrisburg, PA, and operates an agricultural research and demonstration farm in Prince Georges County, MD. CBF is committed to influencing actions that will ensure protection of the Chesapeake Bay, its tributaries, and the living resources that are dependent upon these vital natural resources.

To this end, we firmly believe that research, development, and technical information efforts should be accelerated on the practical and efficacious use of biologically based methods of pest control. Critical needs exist for control of insects in wooded areas, of insects and plant diseases on food crops, and of weeds in croplands.

Specifically, we are concerned about the increased infestations by the gypsy moth in the Bay region and the efforts to control its destruction. Widespread application of chemical pesticides poses a potential threat to the Bay. As well, widespread loss of hardwood trees could be an environmental disaster. Effective pest controls are needed, but the controls need to minimize adverse impacts on the Bay. Biological methods of pest control show great promise, particularly in and near wetlands, in wilderness areas, on recreational lands, and in highly populated residential areas.

We are further concerned about the potential for agricultural and homeowner use of pesticides to contaminate our region's ground and surface waters. Alternative pest control strategies are desperately needed in order to reduce the use of pesticides and to limit their potential to pollute groundwater and the Bay. Biological controls offers some real hope that farmers and homeowners will have non-chemical choices in their battle against pests.

The time has come for the Agricultural Research Service (ARS) to accelerate its efforts to develop biological pest controls. Therefore, ARS should be directed to strengthen its efforts. A number of related activities are now underway at the Beltsville Agricultural Research Center, but there are a number of serious gaps. An annual increased appropriation of $2.4 million dollars is recommended to fill these gaps. Specifically,

research should be expanded or initiated on viruses, bacteria, and pheromones for control of the gypsy moth; on biological control of foliar fungal diseases; on microbial agents for controlling insect pests of vegetables; on genetically altered insect viruses; and on microbial agents for control of weeds. Also, a national technology transfer and information center dedicated to biologically based methods of pest control, operated jointly by ARS and the University of Maryland is needed in order to facilitate the development and use of biological controls. ARS should be expected to support technology transfer and information activities through extramural projects and to strengthen the joint efforts currently underway between the University of Maryland Center for Agricultural Biotechnology and the Beltsville Agricultural Research Center.

The Chesapeake Bay Foundation appreciates having this opportunity to present our views on this important subject. We hope that you will consider favorably our input.

UNIVERSITY OF CALIFORNIA, RIVERSIDE

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COLLEGE OF NATURAL AND AGRICULTURAL SCIENCES
OFFICE OF THE DEAN

CITRUS RESEARCH CENTER AND AGRICULTURAL
EXPERIMENT STATION
OFFICE OF THE ASSOCIATE DIRECTOR

RIVERSIDE, CALIFORNIA 92521

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APR 5 1990
AGRICULTURE

March 28, 1990

On behalf of Western Association of Agricultural Experiment Station Directors (WAAES), Chairman David Schlegel I am forwarding the following resolution that was passed at the WAAES Spring meeting on March 27-28, 1990. We would like to have it entered as testimony in support of funding for the U.S. Salinity Laboratory.

Seymour Van Gundy
Dean

cc: D. Schlegel

RESOLUTION OF SUPPORT FROM THE WESTERN ASSOCIATION OF AGRICULTURAL EXPERIMENT STATION DIRECTORS FOR PROCEEDING WITH CONSTRUCTION OF THE U. S. SALINITY LABORATORY

RESOLUTION: *The Western Association of Agricultural Experiment Station Directors (WAAES),. which was instrumental in founding the U. S. Salinity Laboratory more than a half century ago, reaffirms the critical importance of that research institution as the nation's primary bulwark against salinization of croplands and in the preservation of water quality in those arid and semiarid Western states that are dependent upon irrigated agriculture. In reaffirming the primary research role of the U. S. Salinity Laboratory in the nation's battle against salinity, WAAES urges that Congress in the 1991-92 Fiscal Year appropriate the remaining funding necessary for construction of the laboratory's new relocated quarters on the campus of the University of California in Riverside, California.*

Approved at the Spring WAAES meeting, March 27, 1990.

RATIONALE: Since its founding in 1937, the U. S. Salinity Laboratory has played the primary national leadership role in conducting research on salinity problems, originating new concepts and strategies for water resource management, and in preserving the water quality of all of the western states that are dependent on irrigated agriculture, especially those situated along the Colorado River Basin. Salinization of croplands today constitutes the greatest threat to farming in the semi-arid regions of the American West, and it is estimated that more than $5 billion in crop yield losses occur annually because of salinity problems.

The establishment of the U. S. Salinity Laboratory was an outgrowth of a decision made by the directors of the Agricultural Experiment Stations of 11 Western States in 1935 during a meeting with representatives of the U. S. Department of Agriculture. In that year, Congress adopted the Bankhead-Jones Act making funds available for agricultural research on a regional basis. The decision at that meeting that priority should be given to research on problems connected with the control of salinity in soil and water led to the establishment of the U. S. Regional Salinity Laboratory two years later on grounds adjacent to the University of California's Rubidoux Laboratory at the base of Mount Rubidoux in Riverside, California. As irrigation agriculture became more widespread, the number of cooperating Agricultural Experiment Stations was increased in 1951 to include seven additional midwestern states.. The name of the regional laboratory was then modified to the U. S. Salinity Laboratory, which today is administered by the Agricultural Research Service of the U. S. Department of Agriculture.

28-669 O—90——42

In the years since its founding, the U. S. Salinity Laboratory has become the driving force in sustaining productive agriculture in those irrigation-dependent western states which collectively produce most of America's farm crops. The U. S. Salinity Laboratory has among its many accomplishments played the lead role in developing irrigation management methods to control salinity along the Colorado River, carried out research under the U. S Bureau of Reclamation that has reduced return flow of salt-laden water to agriculture, and assisted the California Water Resources Board in establishing water quality standards for the California Delta. Its research areas have encompassed studies of the relationship of soil salinity to physical and chemical properties; irrigation, drainage, and soil management practices, and salt tolerance and water requirements of crops. Currently, it is developing new use and management techniques for brackish water in the Imperial Valley. U.S. Salinity Laboratory scientists serve a central role as consultants and advisors in assisting numerous public agencies in developing salinity control measures.

For several decades, the U. S. Salinity Laboratory has been hampered in performing its functions by the fact that the half-century old Rubidoux Laboratory is antiquated, outmoded, and grossly inadequate by modern research standards. In 1986, Congress authorized construction of a new U. S. Salinity Laboratory facility to replace the deteriorating quarters of the present laboratory. Subsequently, Congress appropriated $1 million in funding for designing the new facility and an initial complement toward construction. The design phase of the laboratory is 95% completed and will be finalized in April. The new quarters will be relocated on a 7.5 acre site at the University of California, Riverside, which has shown its support for the project by its willingness to lease the new site for 50 years at $1 per year to the federal government.

The Western Association of Agricultural Experiment Station Directors in drafting the above resolution reaffirms the critical importance of the U. S. Salinity Laboratory and its research in sustaining productive agriculture in those Western states which collectively produce most of America's farm crops. Problems of soil and and water salinity represent one of the most urgent long-term threats to irrigated western agriculture in the twentieth century, and the U. S. Salinity Laboratory is a major national resource in combatting such problems through research and in informing and alerting public agencies on salinity related issues and assisting in the development of salinity control measures. We urge therefore that Congress

appropriate the funding necessary to solicit bids from contractors so that construction of the facility can go forward in the 1991-92 budget year.

WAAES membership:

Alaska
Arizona
California
Colorado
Hawaii
Idaho
Montana
Nevada
New Mexico
Oregon
Utah
Washington
Guam

Iowa State University of Science and Technology Ames, Iowa 50011

Department of Sociology and Anthropology
317 East Hall
Department: 515-294-6480
Chairperson: 515-294-8311
Telex: 283359 ISAU UR
FAX: 515-294-1907

Testimony Submitted for the Record by

GERALD E. KLONGLAN, PH.D.

PROFESSOR AND CHAIRMAN

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

IOWA STATE UNIVERSITY

AMES, IOWA

on the

FY 1991 APPROPRIATION FOR THE

COOPERATIVE STATE RESEARCH SERVICE

U.S. DEPARTMENT OF AGRICULTURE

Prepared for the

SUBCOMMITTEE ON RURAL DEVELOPMENT, AGRICULTURE, AND RELATED AGENCIES

HOUSE APPROPRIATIONS COMMITTEE

The Honorable Jamie L. Whitten, Chairman

3 April 1990

SOME OBSERVATIONS ON THE CONDITIONS OF RURAL IOWANS

In the past two years, a general belief has developed that the "farm crisis" is over and that all is well in the countryside. However, based on information shared by the 14 members of the Farmer Creditor Board of the Iowa Farmer/Creditor Mediation Organization on Wednesday, March 28, nothing could be further from the truth. The consensus emerging from the meeting was that chronic, very serious problems still exist in rural America.

My experience as a member of the Board of Directors of that organization has made clear to me that existing solutions to rural problems are inadequate. The current conditions are not good. Public and private policy makers need new ideas and approaches if we are to provide hope for the future and to generate better solutions. I strongly believe that social science research offers great promise for understanding and solving the major challenges facing rural America. I, therefore, offer my personal endorsement, as an Iowan and a scientist of the statement offered to the Subcommittee by the Consortium of Social Science Associations (COSSA). COSSA called upon USDA to increase its support of social science research focused on these major and current problems.

The Iowa Farmer's/Creditor Mediation Organization was created in 1985 to help farmers and lenders deal with a myriad of issues associated with the "farm crisis". Since its inception, it has dealt with over [illegible] cases (about ten percent of the farmers in Iowa). At our most recent meeting, some indicators of the continuing deterioration of the countryside were discussed.

1. Community mental health services reported a sharp increase in new farm family cases between January 1 and March 31, 1988. The Spencer area alone had 30 new cases. There have been five recent suicides in the Dubuque area. Why? Many stressed farmers renegotiated loans and other arrangements during the 1980's, but their expectations of survival have not been realized. These farmers see all the reports that the "crisis" is over and Illinois are back to normal. But know that they have not been successful. What's wrong with me? I'm a failure. There is a great need for press coverage that captures the real condition in the countryside.

2. The Iowa State University Extension Service Rural Concerns Telephone Hotline had a significant increase in problem calls from late May 1987 to March 1988. And most of the calls focus on agricultural finance problems. (Bill about, wife about, divorce, etc. In fact, the increase in number (presently 15 calls per day) and severity of calls prompted Iowa State's extension council to recommend the Rural Concerns Hotline be a permanent extension activity. Because the number of calls had decreased in late 1986 and early 1987, consideration was being given to terminating the hotline at the end of the current state fiscal year (June 30, 1988).

3. The mediators of the Farmer/Creditor organization report an increase in the number of service problem cases. While many mediation cases are resolved in three hours, most are extending to four or five hours. Some cases have been in progress for 14 hours. The mediation service has had approximately 2,000 new cases per month since June 1, 1986. Recognizing that these farm crisis problems are chronic and that there is long-term need for services to handle problem cases, the Iowa Legislature just authorized a three year extension of the mediation organization (until June 30, 1991). In early 1987, there had been discussion not to renew the service because the "farm crisis" was over.

4. Recent statistics (February, March 1988) indicate that the economic condition of Iowa farmers the present a bleak picture for many Iowa farm families. Some analyses show that over 30 percent of farm credit loans are substandard, i.e., loans of $200,000 to $300,000 that far exceed the level needed to provide cash flow. $160,000 to $250,000. Other analyses of farm enterprise records show that the lower one-third of farmers are not making enough income to cover costs, the middle one-third are barely breaking even, and only the top half of the top one-third are making a decent income. Other board members reported that land prices in 1987 have stabilized or dropped $20 to $50 per acre. In some areas of the state,

there are no buyers for farms. In some cases, farmers have not been able to secure operating loans for 1988 spring season. What are they to do? Many do not have resources to replace machinery, so the possibility of increased breakdowns and farm accidents is increased. Another study found that one-third of all land rented in Iowa last year had zero or negative returns.

These various economic conditions make for great personal and family stress, increasing demands on already understaffed mental health, social service, and other support systems. There appears to be an increasing social isolation of problem families. The farm advocacy groups (e.g., Prairie Fire) who were available for farmer support in the 1980's have had major budget reductions, leaving most with only a very small staff. Many of the individuals who advocated so strongly during the 1980's have gotten older and/or have run out of gas. Who is to help farmers prepare for future options?

5. One of the current problems in trying to understand what's happening in the countryside is that any answer you get depends on who you ask about the situation. If you ask some lenders (bankers, Farmer's Home, etc.), they may truthfully indicate that they (the firm, the government agency) are much better off than during their worse conditions of the mid 1980's. But, lenders are only one unit of analysis. Society and farmers are another unit of analysis.

6. Private firms (seed companies, fertilizer companies, etc.) also have to monitor closely to whom they give credit. Company officials must trade off the credit risk of farmers with the company's obligation to stockholders and employees.

There is a desperate need for a greater understanding of what options lie ahead for farm families, rural businesses, and rural communities. The countryside is not well. But, I think social science research can provide some much needed help.

Intertribal Agriculture Council

ROBERT L. MILLER, PRESIDENT, RT. 2 BOX 103, BELLS, OK. 74421 (918) 256-7736

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March 30, 1990

Honorable Jamie L. Whitten, Chairman
House Appropriations Subcommittee on
Rural Development, Agriculture and Related Agencies
United States House of Representatives
2362 Russell Office Building
Washington, D.C. 20515

Dear Congressman Whitten:

The Intertribal Agriculture Council is pleased to submit testimony for the record to the House Appropriations Subcommittee on Rural Development, Agriculture and Related Agencies, and present our concerns for the Administration's proposed 1991 budget.

The formal testimony, which is attached, presents our concerns for improving the delivery of USDA services to the rural Indian communities which are dependent on agricultural production and enterprises for the major economic and employment contributions to the local societies. This testimony suggests the re-establishment of Agriculture Extension Agents on the larger reservations, and establishes a separate Extension program for the smaller reservations to request specific assistance or operate their own programs. It also includes the provision of marketing assistance through the existing budget of the Agricultural Marketing Services of the USDA to aid in establishing access to existing overseas markets in the Pacific rim and Europe for Indian agriculture and value added products.

We believe that the establishment of a USDA presence in Indian country is a critical first step in removing the barriers to full Indian participation in national farm programs, and ask for your support in this request for specific agriculture appropriations in the 1991 budget to establish a farm program presence in Indian country.

Sincerely,

Robert L. Miller

Robert L. Miller,
President

enc.

Intertribal Agriculture Council

ROBERT L. MILLER, PRESIDENT, RT. 2 BOX 103, BEGGS, OK. 74421 (918) 756-7736

Prepared Statement of the Intertribal Agriculture Council on the Department of Agriculture 1991 Budget Justification for the House Appropriations Sub-committee on Rural Development, Agriculture and Related Agencies.

The Intertribal Agriculture Council (IAC) is an organization of 53 dues paying member tribes who together control 43 million acres, or 79 percent, of the 54 million acres held in trust by the United States for Indian people. The IAC was founded by charter in 1987 to promote improvement in Native American and Alaska Native agriculture. We are governed by a Board of Directors composed of elected tribal representatives from each of the twelve regions of Indian Country, reflecting the diverse character of Indian agriculture.

As this continent's first farmers, Native Americans developed many of the foodstuffs which are today eaten all over the world. Long before the first European settlers arrived on the eastern shore, Indians had cultivated and perfected many different varieties of potatoes, tomatoes, corn, summer and winter squash. Many fruits and nuts were also cultivated by the original Americans: bananas, pineapples, avocados, plums, various cherries, walnuts, chestnuts, pecans, and filberts, are just a few examples of the contributions of Native Americans to world diet.

Agriculture production is still the main enterprise in Indian Country. According to reports of the Bureau of Indian Affairs, Indian agricultural production in 1984 was valued at almost two and half times the value of all oil and gas income and nine times the value of all forest products on Indian lands. The BIA has also reported that the agriculture sector is far and away the largest single employer of Indian people, with upwards of 34,000 Indian families engaged in commercial Agriculture and 45,000 engaged in subsistence agriculture.

In the recent past, it became obvious that Native American farmers and ranchers were not participating to any great extent in the programs of the U.S. Department of Agriculture, and therefore were falling further and further behind their non-Indian counterparts. The Intertribal Agriculture Council has been working at correcting this deficiency since its inception, with some success. In the last two years the USDA Agriculture Stabilization and Conservation Service (ASCS) has included Indian landowners in their county balloting process for the first time ever. Farmers Home Administration (FmHA) officials and ASCS officials have made on-site visits to reservations to meet with local residents and the tribal governments and hear their concerns, and the eligibility regulations for some ASCS programs which previously excluded or discouraged Indian applicants have been adjusted to promote Indian involvement. Both of these agencies have started outreach programs to better inform Indian farmers and ranchers of available services.

As we continue our efforts to break down barriers which inhibit Indian participation in national farm programs available to all American farmers and ranchers, we have two main concerns relating to the President's 1991 budget justification for the Department of Agriculture. These are: creation of a USDA presence in Indian country through the re-establishment of Cooperative Extension Agents on Indian reservations, and using the Agriculture Marketing Service to aid in establishing access to existing overseas markets for Indian agricultural and value added products. Each of these concerns is treated separately below.

COOPERATIVE EXTENSION SERVICE.

Introduction.

The re-establishment of Reservation Extension Agents to provide extension services to the American Indian communities has been a major project of the IAC for the past 2 years. In attempting to re-implement this agriculture program of critical importance to the reservation communities we have worked closely with USDA officials. Last November USDA Extension Agents and representatives of the IAC prepared a proposal to re-establish agents on the larger reservations, which is the basis for the recommendations made here.

Background.

Cooperative Extension Agents provide the link between new agriculture technologies developed by the Land Grant Colleges and the application of these developments by the nation's farmers and ranchers. They also serve a liaison function with other USDA programs, such as FmHA; assist in developing Farm plans for financial institutions, provide training in Farm and Ranch business management and record keeping, supervise youth activities such as 4-H, and coordinate special training programs such as food storage techniques, nutrition, and subsistence gardening.

Indian producers are excluded from receiving extension services by the elected off-reservation county committees which control extension services at the local level. Various reasons are given for this exclusion, but the most acceptable one, explained by a ranking USDA administrator in the Cooperative Extension Service involves the funding sources. Funding for the Cooperative Extension Service comes from 4 levels:

Federal Government -	32%
State funds -	47%
County funds -	18%
Private sources -	3%

Reservations are not under county and state jurisdiction in most instances, and therefore do not directly contribute to the county or state tax rolls, although Federal impact funds are provided. The County Extension Agents

are directed by county commissioners and committees who may feel justified in excluding reservations from the service area. In order to obtain extension services several tribes are currently using their own financial resources to pay federally supported Land Grant Colleges to provide them with an Extension agent.

Recommendation:
The remedy to this situation is to re-establish the program of reservation agriculture extension agents specifically to serve those Indian reservations and tribal jurisdictions with sufficient acreage or population to be roughly comparable to counties in size or complexity. This will mean establishing one Agricultural Extension Agent on each Indian Reservation, Indian Community, Native Association, or Consolidated Agency with at least 120,000 acres, and 2 agents on those reservations with over 1,000,000 acres. A total of 86 agents will be required to implement this program at an average cost of $64,000 each, including support costs, as shown below:

Item	Cost per year (in thousands)	
Personnel:		
Agent (full grade equivalent to GS-11/5)	$34.0	
Secretary (1/2 time, GS-4/5 equivalent)	8.0	
Fringe (20%)	8.4	
Total yearly Personnel Services:		$50.4
Operational Costs		
Supplies and Expense:	$2.4	
Travel and Training	4.0	
Local transportation/Vehicle expenses	3.6	
Equipment	3.6	
Total Operational Costs		$13.6
Total yearly cost per Reservation agent:		$64.0

In developing this average budget it is recognized that actual costs will vary from state to state. Office costs, including rent, furniture, telephone, and etc. will be borne by the recipient tribe as an in-kind contribution. The first year delay in implementation caused by recruitment time frames will provide considerable personnel lapse money for the procurement of necessary equipment, such as Ag-Net compatible mini-computers. In some remote areas additional costs in housing allowances or similar enticements may be necessary to recruit suitably qualified individuals. Equipment costs in subsequent years could be reduced and will allow flexibility to cover those few positions which require housing allowances or similar unusual or unplanned expenses.

A separate program of direct extension assistance to those reservations which do not qualify based on acreage criteria, but which demonstrate unmet needs due to isolation or other factors, should be established under the national office of the Cooperative Extension Service as an integral part of this initiative. The purpose of this Direct Assistance Program is to pro-

vide direct response to specific tribal government requests for extension services by supplying resources to those entities which provide the actual service. This could include the Extension Service directly, a land-grant college, the tribal government, or a separate contractor approved by the Cooperative Extension Service. This national program segment will require initial funding at $1,000,000 per year, and be operated directly out of the Cooperative Extension Service offices in Washington, DC.

The total expense will be $6.5 million, the state breakdown is as follows:

State	Agents Needed	Cost (in thousands)
Alaska	4	$256.0†
Arizona	19	$1,216.0
California	2	$128.0†
Colorado	2	$128.0
Florida	1	$64.0†
Idaho	3	$192.0
Maine	1	$64.0†
Minnesota	2	$128.0†
Montana	8	$512.0
Nevada	4	$256.0†
New Mexico	11	$704.0
North Dakota	1	$64.0
Oklahoma	3	$192.0†
Oregon	1	$64.0†
South Dakota	10	$640.0
Utah	4	$256.0
Washington	6	$384.0†
Wisconsin	2	$128.0†
Wyoming	2	$128.0
Direct Assistance Program (Washington D.C. office)	-0-	$1,000.0
States: 19	Agents: 86	$6,504.0

† Listed States which are most likely to benefit from the Direct Assistance program. Other States in this program include: Connecticut, Kansas, Louisiana, Michigan, Mississippi, Nebraska, and North Carolina.

These funds could be appropriated under section 3(d) of the Smith Lever act, used only for direct extension services on reservations and would not be subject to university overhead or state matching requirements.

The emphasis of the reservation extension program will be on traditional extension service activities in agriculture development, management and the youth activities of 4-H. In addition to conducting traditional agricultural and youth extension programs, the reservation extension agents will serve as primary liaison and referral source between the reservation or Indian community and local USDA agencies and programs.

These reservation extension programs must be provided with the same level of technical support from the Land Grant Colleges as county programs. The reservation extension agents will be employees of the Cooperative Extension Service unless the program is operated by a tribal government under the provisions the Self-determination Act (25 USC 450 et. seq.), and will be supervised by the appropriate Cooperative Extension Service official at the state level in consultation with tribal governments. In addition, Reservation Extension Advisory Committees comprised of at least 3 members elected from the local reservation community will be established. These advisory committees will function in the same manner as existent county committees to identify extension education needs, provide referral for local community concerns, set program priorities, and review and approve Cooperative Extension plans of work. Exhibit 1 provides a listing of the potential Extension Agent assignments by tribal location.

INTERNATIONAL MARKETING ASSISTANCE

Introduction:
Recent visits with Oriental and European marketing specialists, sponsored by the American Indian Trade and Development Council, have indicated that a potentially large and viable market exists for authenticated American Indian products in both the Pacific Rim nations and in Europe. The IAC is proposing that the Agricultural Marketing Service be directed by the Congress to extend its marketing assistance to the Native American agriculture community in accessing these speciality markets.

Background.
The American Indian agriculture community produces numerous agriculture products, including many of a traditional nature. In addition, many individuals and organizations are operating small cottage industries which utilize agriculture products, such as wool, to create value added products such as the famous Navajo blankets. However, the marketing of authentic Native American agriculture products is largely limited to existing markets in nearby communities and major railway loading points. Speciality products, such as Indian corn, gourds, and wild rice are sold at local tourist locations or to major trading houses, often at substantially reduced prices if they can be sold at all.

At the same time, a thriving market for all Native American products is reported throughout Europe and the Orient, and especially in both Japan and West Germany. Unfortunately, the products marketed in these locations are generally not produced by Native Americans nor do they originate in the United States. Even in major Indian centers in the United States many tourists and travelers are buying products which they believe to be the products of American Indians when in fact they originated in Taiwan or Latin America. A popular label in Arizona reports that the product was "Made by Indians of the Americas" and then in small print

indicates it is a product of Colombia. While this mass marketing of the American Indian mystique is going on around the world, the true American Indian and the United States in general are not participating in this international trade, and Native Americans remain at the bottom of the economic ladder in this country.

Recommendation.
In an effort to define the necessary actions to correct these deficiencies which negatively affect the American balance of trade, the Intertribal Agriculture Council has sponsored, as part of the Annual Indian Agriculture Symposium a series of workshops on marketing. These sessions, attended by Indian leadership and international marketing specialists as well as representatives of other Tribal organizations, have resulted in a plan of action which could correct this unfavorable trade situation. This proposed program consists of 3 steps:

1. Develop, register, and administer a Native American and Alaska Native Certification Mark.

The development and registration of a Certification Mark, to be used by bona fide Native American individuals and enterprises, would have an immediate affect on the world market for speciality Native American agriculture products and value added products of an agriculture nature. Coupled with the design and implementation of this distinctive Certification Mark is the worldwide Information campaign to ensure recognition in the target markets.

It is suggested that the development and registration of the necessary mark could be achieved in short order, but the necessary international informational campaigns would be of a longer duration, and somewhat more expensive. Equally important is the development of certification procedures and maintenance of the records which indicate who is approved to use the certification mark. Preliminary review indicates that this phase of the program can be accomplished for approximately $200 thousand, including the international information campaign, if existing tribal organizations are enlisted to assist in the effort.

2. Develop and publish a yearly Indian Agriculture marketing guide.

The publication of an Indian Agriculture Marketing Guide which lists the Indian suppliers of products available for the targeted markets, their pricing structure, availability and contact points, as well as other pertinent data, will improve the access by both buyers and sellers to the true American Indian products currently being copied at home and abroad. The operations necessary to prepare such a guide include gathering product data on a tribe by tribe basis, creation of computerized data bases to maintain product availability and pricing information, and development of monitoring systems to ensure that the data base information remains current and reliable.

Again, use of existing tribal organizations and governments can greatly streamline and enhance this project.

Once established, this marketing guide could be supported by the individual sellers or buyers through dues and marketing guide sales receipts. Estimated cost of creating this system is $150 thousand.

3. Implement a series of Seminars and training sessions on International and local market access for Native Americans and Tribal Governments.

The international marketing of agriculture produce and value-added products is a specialized field of endeavor which is currently beyond the experience of most tribal governments and individuals. A series of USDA sponsored training sessions could greatly increase Indian capabilities in this area.

The purpose of the seminars would be to inform Native American producers and tribal governments of available resources and markets, and provide specific information on strategies for accessing international markets. First year cost of program is estimated at $240 thousand based on 12 regional seminars of 3 days each using 80% USDA specialists and 20% private sector contractors at a total predicted cost of $20,000 per session.

We in the Intertribal Agriculture Council are grateful for the opportunity to submit testimony on these issues of importance to the Indian Agriculture community.

Exhibit 1. Acreage figures for potential placement of Extension Agents under the guidelines recommended by the Intertribal Agriculture Council. Tribal Jurisdictions are listed by BIA Area, State and Agency. Source: Annual Report of Indian Lands; U.S. Department of the Interior - Bureau of Indian Affairs, Office of Trust Responsibilities. September 30, 1985.

Agency or Reservation	No. of Tribes or Reservations	Acreage	Extension agents needed
Aberdeen Area			
Nebraska			
Winnebago Agency (inc: Ia)	3 Reservations	64,399	0
North Dakota			
Fort Berthold	3 affiliated	419,361	1
Fort Totten	1	53,239	0
Turtle Mountain	1	33,318	0
South Dakota			
Cheyenne River Sioux	1	1,395,904	2
Crow Creek	1	125,483	1
Lower Brule	1	130,239	1
Pine Ridge (inc: Ne)	1	1,780,443	2
Rosebud Sioux	1	954,571	2†
Sisseton (inc: ND)†	1	108,134	1†
Standing Rock (inc: ND)	1	847,252	1
Yankton	1	36,558	
	Aberdeen total		11
Albuquerque Area			
Colorado			
Southern Ute	1	310,001	1
Ute Mountain Ute (inc: Ut & NM)	1	597,328	1
New Mexico			
Jicarilla Apache	1	823,580	1
Laguna Pueblo	1	461,098	1
Mescalero Apache	1	460,678	1
Northern Pueblos Agency	8 Pueblos	241,959	1
Ramah Navajo	1	146,953	1
Southern Pueblos*	10 Pueblos*	342,818	1
*(Does not include Acoma, Isleta or Zia in totals)			
Acoma Pueblo	1	263,611	1
Isleta Pueblo	1	211,034	1
Zia Pueblo†	1	117,702	1†
Zuni Pueblo (inc: AZ)	1	416,182	1
	Albuquerque Total		

Anadarko Area			
	Kansas		
Horton Agency (inc: Co, Ne, Ok)	4 Reservations	48,111	0
	Oklahoma		
Anadarko Agency	3 Res.	267,405	1
Concho Agency	1	84,570	0
Pawnee Agency	5	54,909	0
Shawnee Agency	3	38,841	0
	Anadarko Total		1
Billings Area			
	Montana		
Blackfeet Nation	1	939,838	1
Crow Nation	1	1,517,405	2
Fort Belknap Indian Community	2 Affiliated	617,487	1
Fort Peck Assiniboine/Sioux	2 Affiliated	904,683	1
Northern Cheyenne	1	436,948	1
Rocky Boy's Chippewa Cree	1	108,334	1
	Wyoming		
Wind River Reservation	2	1,888,557	2
	Billings Area Total		9
Eastern Area			
	Alabama		
Porch Band	1	213	0
	Connecticut		
Mashantucket Pequot	1	1,201	0
	Florida		
Miccosukee††	1	75,145	††
Seminole Agency††	5 Reservations	79,028	1
	Louisiana		
Choctaw Agency	2 Reservations	436	0
	Maine		
Passamaquaddy Township	1	67,033	0
Penobscot Nation	1	145,665	1
	Mississippi		
Choctaw Reservation	1	17,926	0
	North Carolina		
Cherokee Agency	1	56,572	0
	Eastern Area Total		2

Juneau Area**			
	Alaska		
Anchorage Agency	Public Domain Allotments	232,357	1
Bethel Agency	Public Domain Allotments	235,649	1
Fairbanks Agency	3	236,959	1
Nome Agency	Public Domain Allotments	175,084	1
Southeast Alaska	Public Domain Allotments	4,079	0
	Juneau Area Total		4**
Minneapolis Area			
	Michigan		
Michigan Agency	7	21,656	0
	Minnesota		
Minneapolis Area Office (inc: Ia)	5	6,893	0
Minnesota Agency	7	197,036	1
Red Lake	1	564,452	1
	Wisconsin		
Great Lakes Agency (inc: MN)	13	195,808	1
Menominee Reservation	1	222,552	1
	Minneapolis Area Total		4
Muskogee Area			
	Oklahoma		
Osage (inc: Ar, Az, Mo, Mt)	Scattered Allotments	1,637	0
Osage Reservation	1	168,794	1
Five Civilized Tribes	5 Tribes	473,697	1
Miami Agency	8 Tribes	17,810	0
	Muskogee Area Total		2
Navajo Area			
	Arizona		
Chinle (inc: NM)	1	1,772,488	2
Fort Defiance (inc: NM)	1	3,457,478	2
Western Navajo (inc: Ut)	1	5,408,703	2
	New Mexico		
Eastern Navajo	2	243,129	1
	Utah		
Shiprock	1	1,891,900	2
	Navajo Area Total		9

Phoenix Area			
	Arizona		
Colorado River (inc: Ca)	1	268,691	1
Fort Mojave (inc. Ca & Nv)	1	32,677	0
Fort Apache	1	1,664,972	2
Hopi Reservation	1	1,561,213	2
Kaibab Paiute Reservation	1	120,413	1
Papago Agency (Tohono O'oddam)	3	2,855,968	2
Pascua-Yaqui Agency	1	894	0
Pima Agency	3	393,932	1
Salt River Agency	2	75,186	0
San Carlos Reservation	1	1,826,541	2
Truxton Agency*	4*	190,922	1
*(Does not include Hualapai in totals)			
Hualapai	1	992,462	1
	California		
Fort Yuma (inc: Az)	2	50,049	0
Chemeheuvi Reservation	1	30,653	0
	Idaho		
Owyhee Reservation (inc: Nv)	1	298,819	1
	Nevada		
Eastern Nevada (inc: Ut)*	10*	135,046	1
*(Does not include Owyhee in totals)			
Western Nevada (inc: Ca & Or)*	16*	203,935	1
*(Does not include Pyramid Lake or Walker River in totals)			
Pyramid Lake	1	476,688	1
Walker River	1	323,406	1
	Utah		
Southern Paiute	5	32,421	0
Uintah & Ouray	1	1,021,557	2
Skull Valley	1	17,444	0
	Phoenix Area Total		20
Portland Area			
	Alaska		
Metlakatla	1	86,741	0
	Idaho		
Fort Hall	2 Affiliated	522,510	1
Northern Idaho Agency	3 Res.	155,514	1
	Montana		
Flathead Reservation	2 affiliated	627,070	1

Portland Area (cont.)

Oregon			
Celilo Village	1	46	0
Siletz Reservation	1	3,673	0
Umatilla Reservation	1	85,255	0
Warm Springs Reservation	Confederated	643,507	1
Washington			
Colville Reservation	1	1,063,043	2
Olympic Peninsula Agency	11	164,549	1
Puget Sound Agency	12	32,891	0
Spokane Agency	3	138,340	1
Yakima Reservation	1	1,130,285	2
	Portland Area Total		10

Sacramento Area

California			
Central California Agency†	44†	104,681	1†
Hoopa Agency	17	90,444	0
Southern California Agency	32	245,606	1
	Sacramento Area Total		2

† Some reservations which fall slightly under the targeted acreage limitation are included in the higher bracket due to their relative physical or cultural isolation.

††The Florida reservations are recommended for consolidation, with a single agent, due to internal similarities: the five Seminole land holdings listed as separate reservations by the BIA are under a central tribal government.

**Alaska acreage figures provided in the BIA report list only "trust" lands, generally individual allotments. Not included in these totals are approximately 44 million acres of Native Village and Native Corporation lands. Some Extension services are currently being provided by the University of Alaska and Native Corporations who use PL93-638 contracts for BIA Extension money, among other funding sources. Larger villages and corporations might be able to justify more than the 4 recommended agents, but this should be a good start which the Alaskans can modify in the future if they feel the need.

Summary of Agents by State:

Alaska	4
Arizona	19
California	2
Colorado	2
Florida	1
Idaho	3
Maine	1
Minnesota	2
Montana	9
Nevada	4
New Mexico	11
North Dakota	1
Oklahoma	3
Oregon	7
South Dakota	10
Utah	4
Washington	6
Wisconsin	2
Wyoming	2
States: 19	Agents: 86

Summary of the number of tribes served under the 120,000 and 1,000,000 acreage limitation, by BIA area office:

Area	Tribes served	Tribes not served
Aberdeen	11	5
Albuquerque	25	0
Anadarko	3	13
Billings	10	0
Eastern	7	7
Juneau	*	*
Minneapolis	22	12
Muskogee	6	8
Navajo	6	0
Phoenix	46	13
Portland	24	16
Sacramento	76	17
Totals	239	91

Final Note: The totals listed above differ from those in previous IAC testimony: Aberdeen area is shown with 11 agents here, rather than twelve, and Billings Area is shown with 9 rather than eight as previously indicated. Total Tribes does not add to the BIA figure of 248, due in part to the inflation by including all the California "Rancherias" and scattered public domain allotments.

Testimony of Nancy Thompson
Center for Rural Affairs
Walthill, Nebraska

Before the
U.S. House of Representatives Appropriations Committee
Rural Development, Agriculture, and Related Agencies Subcommittee

Thursday, March 29, 1990
Washington, D.C.

Mr. Chairman, thank you for this opportunity to provide testimony concerning the loan programs of the Farmers Home Administration. The Center for Rural Affairs is a non-profit organization founded in 1973. The Center has monitored and analyzed federal farm credit policies for the past twelve years--a period of enormous stress in U.S. agriculture and at FmHA. In 1985 and 1987 Congress passed major legislation that has in many respects been effective in dealing with that stress. The 1985 credit title dealt with the needs of existing farmers by appropriating guaranteed loan funds which allowed commercial lenders to stick with their existing farm borrowers through some very tough times. Similarly, the FmHA component of the 1987 Act dealt with stabilizing existing borrowers.

We believe it is now time, however, to thoroughly re-examine FmHA's farm loan programs and to build on proven programs using appropriate innovations to enhance their effectiveness and fiscal responsibility. New FmHA programs must be designed to address a demographic reality we now face. Amost half of the country's farm assets are held by farmers who will be retiring in the next ten years. In recent years, most farm assets sold have been acquired by established farmers or investors. This loss of new-entry farmers and the resulting concentration in ownership of farming assets are not inevitable, but effective FmHA lending targeted to the needs of beginning farmers is essential to assure beginning farmer access to land ownership. The transfer of these assets is an historical opportunity and will be one of the most important factors affecting the social and economic health of the country's agriculturally based rural communities.

We have reviewed the performance of FmHA lending programs, including shelves of reviews and critiques prepared by GAO and the USDA Inspector General's office. We find there are two very clear lessons about FmHA farm lending.

1. <u>FmHA's traditional direct Farm Ownership and Operating Loan programs have been the most successful of all FmHA's farm lending programs.</u> Over the decades, these two programs have created thousands and thousands of new farming opportunities and experienced very low loan loss rates. Unfortunately, this incredible success story currently serves no particular political interest, and it has been completely lost in the last few years' worth of reporting on FmHA's problems. We want to say it now, loud and clear, that these decades-old programs are far and away the most successful of all FmHA's programs from the standpoint of serving both fiscal efficiency and the agency's public purposes.

2. By contrast, as currently designed, guaranteed lending does nothing to assist beginning farmers, the primary effect has been to bolster the creditworthiness of more established farmers and lenders' portfolios. Both GAO and USDA Inspector General's reports have shown that nearly all of the guaranteed loans made in the past few years have gone to existing borrowers of a commercial lender. They have not been used to either graduate direct borrowers to commercial credit or to assist new borrowers obtain commercial loans. As a recently publicized event in Iowa shows, guaranteed loans can be exploited by a lender not only to bolster a bad loan, but to deceive farm borrowers and precipitate liquidation.

Despite these lessons learned, the Bush Administration's 1991 budget proposal for FmHA is not directed to the needs of beginning farmers. It instead is a blueprint for maintaining an agency which rather grudgingly assists those already in debt to FmHA and provides some assistance, primarily through guarantees, to the established farm borrowers of commercial and cooperative lenders. The proposed budget appropriation levels show little support for or understanding of FmHA's mission or the pressing need for beginning farmer lending. The budget also shows a preoccupation with guaranteed loans with little regard to their limited use in recent years.

Specifically, the Bush Administration's proposed appropriation levels would provide:

1. Combined direct and new subsidized guarantee OL funds roughly equivalent to FY 1988 and 1989 actual use of direct OL funds. Even assuring complete use of subsidized guarantees, this means very few new farming opportunities provided through the OL program because current direct borrowers will absorb most of those funds to continue their operations.

2. Direct FO funds of $38,000,000 with all funds reserved for socially disadvantaged (SDA) borrowers. It is good to see a recognition that FmHA lending has often systematically excluded minority farmers. But just as direct FOs are valuable credit assistance for SDA borrowers, they are also an irreplaceable entry tool for all farmers. Limiting direct FO eligibility to SDA borrowers would be extremely divisive in many parts of the country and would ignore the value of these loans to a wide variety of beginning farmers.

3. New subsidized guaranteed loans for guaranteed loans (FO and OL) estimated to average 3% on a maximum of $400,000,000 in loans per year. At these levels the total interest assistance would be $12,000,000 nationally. This amount would provide little help for borrowers trying to graduate to guaranteed credit or for new applicants who would with adequate assistance be able to get started with guaranteed loans. At the 3% level, these funds would, for instance, permit less than two subsidized guarantees in each Nebraska county per year.

4. Guaranteed OL appropriations of $2,250,000,000. This level would provide a supply of funds far in excess of the demand which can be reasonably anticipated. FY 1988 and 1989 guaranteed OL lending averaged about $900,000,000 despite extensive agency efforts to make more of these loans. The guaranteed interest assistance may add to the demand for these

loans, but full use of the $350,000,000 proposed and continued lending of $900,000,000 in unsubsidized guaranteed, would still leave one billion dollars in unused funds. Appropriating funds that will not be used may be politically attractive, but it adds to neither agency effectiveness nor to the number of farming opportunities FmHA provides.

One potentially beneficial part of the Bush Administration proposal is the call for "subsidized guarantees" on $350,000,000 in guaranteed operating loans and $50,000,000 in guaranteed farm ownership loans. This approach can ease the transition from direct to guaranteed credit for FmHA borrowers, and it could get some FmHA eligibile borrowers directly into the commercial credit system. It is not a new idea, though, and unfortunately, it has a history of failure. It was tried without much success in the 1985 farm bill (the "interest buydown" program) and again in the 1987 Agricultural Credit Act (the FCS Demonstration Project).

The history of interest-assisted guaranteed loans indicates that this approach needs careful implementation if it is intended to be anything other than a token program, let alone a program capable of reaching beginning farmers. Nothing in the FmHA proposals show the innovation or attention to detail needed to launch a new program that would make guaranteed loans available to traditional FmHA borrowers including beginning farmers. In fact, the Administration's proposal states that the proposed modification to the guaranteed OL program is designed "1) to facilitate the transition of existing direct loan borrowers to guaranteed loans and ultimately to private sector credit; and 2) to provide a source of assistance to current borrowers of private lending institutions who can no longer continue with those lenders on commercial terms." These are useful purposes for guaranteed OLs but they exclude beginning farmers and small farmers who wish to expand to family size but do not have direct loans.

All of the above indicates a kind of business as usual at FmHA that is not desirable for several reasons. First, FmHA lending has resulted in far too many borrower failures and far too much government losses in recent years. The budget would diminish these failures and losses only to the extent it limits overall lending. The alternative--using FmHA supervised credit to help build viable farming operations which are able to repay their FmHA debt--is nearly ignored. Secondly, the budget proposal would provide almost no opportunities for new farmers to use FmHA credit to start and build their operations.

Contrary to the Administration's budget proposal, we believe earmarked appropriations and new approaches to FmHA lending are needed. These must address the needs of beginning farmers and protect the government's interests. There should be separate and explicit provisions for beginning farmers. The main features of these provisions include:

--"Downpayment loans" which would provide a new mechanism by which FmHA and a beginning farmer would jointly come up with the downpayment for farmland purchase with the main loan being financed by a retiring seller or commercial lender. This approach is farm more efficient than current FO lending because it leverages the same appropriated amount to roughly three times as many borrowers.

--An annual per borrower "subsidy assistance cap" which would be applied to both direct and guaranteed loans. The effect of such a cap would

be to concentrate assistance to beginning farmers whose credit needs typically are (and should be) smaller.

--Borrower training would require each borrower to have an understanding of basic farm financial management, and completion of training would be a prerequisite of loan making. Loan assessment should be conducted on each new loan by outside credit counselling services. The analysis would specifically ask: "Can FmHA credit help this borrower acheive this operation's goal within the terms and timeframe allowed by FmHA?" While the borrower training and loan assessment procedures represent a new cost, we believe that increased management skills better assures repayment of FmHA loans.

The chart below contains the actual FO, OL, and EM appropriations for FY 1989 and the appropriations levels we recommend for these loan programs for FYs 1991-93. The levels recommended are designed to allow implementation of the lending program reforms we believe are necessary.

Overall the direct appropriations would be slightly decreased from FY 1989 but would still provide funds earmarked for beginning farmer FO and OL loans. This is possible because the EM appropriation would be eliminated or alternatively lowered to an amount nearer actual EM lending in recent years. While the overall guaranteed appropriation levels are significantly lower than under the 1985 farm bill, they too include funds earmarked for beginning farmers. That is possible because there have been large amounts of unused guaranteed OL funds in recent years. The chart also includes the estimated costs of providing borrower training and assessment for new FmHA borrowers.

FmHA FO, OL, and EM Appropriations (in $1,000s)

FY	Direct OL*	Guar OL	Total OL	Direct FO	Guar FO	Total FO
1989	$900,000	2,300,000	3,200,000	95,000	474,000	569,000
91-93	1,300,000	1,500,000	2,800,000	400,000	600,000	1,000,000

FY	EM**	Total Direct	Total Guarantee	Total Direct and Guar
1989	$600,000	1,595,000	2,774,000	4,369,000
91-93	0	1,500,000	2,100,000	3,600,000

These appropriation levels would reduce overall direct and guaranteed funding, leave sufficient funds to meet the needs of existing borrowers and more established farmers, and still earmark enough direct and guaranteed funds for a significant beginning farmer effort through FmHA.

Proposed appropriations earmarked for beginning farmer loans for FY 1991-93
Direct OL: $400,000,000
Guaranteed OL: $500,000,000
Direct FO: $325,000,000***
Guaranteed FO: $325,000,000
Total: $1,555,000,000

Potential number of beginning farmer opportunities created with these funds (based on FY 1989 and 1990 average size loans):

Direct OL borrowers: 10,000 (10,000 times $40,000 equals $400,000,000)
Guar. OL borrowers: 5,556 (5,556 times $90,000 equals $500,000,000)
Direct FO borrowers: 5,449****
Guar. FO borrowers: 2,449*****
Total borrowers: 23,454

* FY 91-93 proposed direct OL appropriations each include $100,000,000 for natural disaster loans made through and under the provisions of the OL program. Alternatively, separate EM appropriations of $100,000,000 would easily meet the EM demand present in recent years.
** Direct only.
*** Not less than 25% of this appropriation would be used for conventional limited resource FOs in accordance with current legislation.
**** This number represents the increased borrowers made possible because of the new 10% downpayment requirements and an additional 25% made possible because of the leveraging of non-FmHA funds made possible with downpayment loans. ($325,000,000 divided by $82,000= 3963 times 1.10% equals 4,359 times 1.25% equals 5,449 borrowers).
***** This number represents the increased borrowers made possible because of the new 10% downpayment requirements. ($325,000,000 divided by $146,000 equals 2,226 times 1.10% equals 2,449).

Estimated cost of providing borrower training and loan assessment when 23,454 new beginning farmer loans are made
Loan assessment costs: $8,000,000 (23,454 borrowers plus 16,546 unsuccessful applicants equals 40,000 applicants times $200)
Borrower training costs: $7,036,200 (23,454 borrowers times $300)
Limited resource borrower training costs: $4,000,000 (8,000 times $500)
Total costs: $19,036,200

While it is impossible to estimate the exact cost of interest assistance that would be provided on beginning farmer direct and guaranteed loans, a ballpark figure of $64,000,000 should be close to the potential cost. This amount would provide 4% interest assistance on the entire proposed $1.6 billion in proposed beginning farmer appropriations.

The programs we have outlined and the appropriations levels we have recommended are critical if FmHA is going to again play the role in agricultural lending that it has played so successfully for most of its history. A reevaluation of FmHA's mission and the development of programs which enhance rather than ignore the opportunities the agency can create for beginning farmers is essential. We ask that the Subcommittee carefully analyze the Bush Administration's budget proposal and reject the move towards a withdrawal of FmHA's role in direct farm lending. We request that the Subcommittee instead adopt the appropriations levels outlined above so that beginning farmers will have a chance to establish themselves.

Thank you Mr. Chairman for this opportunity to testify.

Mobay

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Bayer

Mobay Corporation
A Bayer USA Inc. Company

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April 3, 1990

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The Honorable Jamie L. Whitten, Chairman
House Appropriations Committee
Subcommittee on Rural Development,
Agriculture and Related Agencies
2362 Rayburn House Office Building
Washington, DC 20515

Dear Congressman Whitten:

As a member of the Coalition for Advancement of Research on Agriculture, Food and Environment, Mobay Corporation submits this letter as written testimony in support of the National Initiative for Research on Agriculture, Food and Environment, and respectfully requests that this letter be included as part of the hearing record developed by your Committee.

As a basic manufacturer of agricultural pesticides, we are committed to production-related research which will continue to keep America strong and competitive in the world agricultural market.

Agricultural technology in America has made miraculous advances over the past sixty to seventy years. We must not let the commitment to continued advancement falter. The need to increase funding for research on agricultural production of food and fiber is critical for our country, if it is to advance technology and keep abreast with a rapidly expanding population, both at home and abroad.

Increased productivity through advanced technology is also necessary for the United States to maintain a strong balance of trade internationally. Only a strong research base will permit our country to keep its competitive edge in the international market place.

Mobay also is supportive of the research initiative to maintain our present safe food supply. As citizens and consumers, we too are concerned about environmental quality and a safe and nutritional food supply. We realize the concern of others in this area and support current regulatory guidelines to maintain our environment and human safety. Continuing advances in technology will enable us to continue to strengthen our agricultural base;

however, in doing so, we must always be conscious of and support parallel research efforts to assure that our technology is compatible with a safe food supply and environmental quality.

We apprciate the opportunity to support the National Initiative, and request that your committee take appropriate notice of our supportive position in this matter.

Yours very truly,

MOBAY CORPORATION
AGRICULTURAL CHEMICALS DIVISION

Heinz K. Wehner
Executive Vice President
and General Manager

HKW/CAR/smm

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March 31, 1990

Congressman Jamie L. Whitten
Chairman, Subcommittee on Rural Development,
Agriculture, and Related Agencies
Room 2362
Rayburn House Office Building
Washington, D.C. 20515-6016

Dear Congressman Whitten:

Enclosed is a statement in support of our request for additional funding of $980,000 for urgently needed research at the USDA-Agricultural Research Service Research Station at Akron, Colorado. We request that this testimony be included in the record of the Subcommittee.

Sincerely,

Gilbert Lindstrom
Chairman, Farmers Advisory
Committee to the USDA-ARS
Akron, Colorado Research
Station

enc.

STATEMENT OF MR. GILBERT LINDSTROM, CHAIRMAN OF THE FARMER
ADVISORY COMMITTEE TO THE ARS-USDA RESEARCH STATION
AT AKRON COLORADO
BEFORE THE HOUSE SUBCOMMITTEE ON RURAL DEVELOPMENT,
AGRICULTURE, AND RELATED AGENCIES.
APRIL 1990

This is an urgent request for increased funding for research at the USDA-ARS Central Great Plains Research Station, Akron, Colorado. The research detailed in the following pages has the potential to revitalize the economy of rural areas in the Central Great Plains of Colorado, Kansas and Nebraska.

New cropping systems that maximize the use of precipitation can mean increased profits for farmers and ranchers of $4 million a year in the Central Great Plains. If these research findings can be refined and are adopted by farmers, a potential increase in gross income of Colorado alone would be $25.5 million per year. If only one of the figures kept the practices the impact would still be over $11 million per year. Equal adoption rates in Nebraska and Kansas would at least quadruple the impact.

THE ECONOMIC SITUATION:

1. In Colorado, 2.5 million acres of wheat are grown each year in a wheat-fallow system. Thereby each year there is also 2.5 million acres of fallow land that produces no crop. Wheat production in southern Colorado has had an average total farm gate value of $280,000,000 per year with a gross income per acre based on the wheat-fallow system, of about $41 per acre per year.

2. Experiments at USDA-ARS and Colorado State University indicate that a 3 year rotation would increase farm gate income $15 per acre compared to wheat-fallow. The result an added gross income of $37.5 million per year. If only half of the farmers adopt the new rotations the increase in gross income still would be over $18 million per year.

NEEDED RESEARCH AND TECHNOLOGY TRANSFER:

1. Research methods will be placed on farmers' fields that increase precipitation use efficiency, reduce erosion, preserve water quality and increase farmer profits.

2. A training program will be initiated to transfer the new technology to the farm. A network approach with on farm research-demonstration activities would be the key component. Economic analysis will be an integral part of the on farm tests.

FUNDING NEED:

1. $500,000 per year for 5 years to the ARS-USDA at Central Great Plains Research Station at Akron, Colorado with cooperative agreements that share the funding with the Nebraska, Kansas and Colorado State Experiment Stations.

POTENTIAL RETURN ON RESEARCH INVESTMENT:

1. The total investment $2.5 million for the 5 year funding period could potentially be returned in the three states in only 3 years.

ENVIRONMENTAL BENEFIT:

1. Improved erosion control via crop residue maintenance on the soil surface.

2. Improved ground water quality via reduced leaching of fertilizer.

3. Reduced use of pesticides via new crop rotations that control weed, disease and insect problems.

4. Integration of cooperative production systems that will enhance rural revitalization.

CENTRAL GREAT PLAINS RESEARCH STATION
USDA-ARS, Akron, CO

New Crop and Soil Management Systems

An Opportunity to Increase Farm Profits in Eastern Colorado

A RESEARCH PROPOSAL FROM CONCERNED WHEAT FARMERS
AND RANCHERS IN EASTERN COLORADO

Justification:

Economic strength, social stability and a sustainable, environmentally acceptable agriculture depend on maximizing water use efficiency throughout the Great Plains region. Present cultivation practices, using the wheat-fallow system have resulted in extensive erosion by wind and water and a dependence on government subsidies. Saline seep development indicates inefficient water use in many areas. Conservation tillage practices to control soil erosion further compound water problems because of enhanced infiltration of water in the subsoil. When this water is not used by crops, it accelerates movement of soluble salts and agricultural chemicals into the ground water or creates unproductive seep areas. National concerns for promoting an economically sustainable agriculture, which is environmentally sound, give impetus to the need to develop dryland cropping systems that promote more efficient use of soil and water while protecting the environment. New cropping systems that maximize the use of water can mean increased profits for farmers and ranchers on 29 million acres in the Central Great Plains.

Present Economic Situation:

Winter wheat is the primary dryland cash crop produced in the Central Great Plains. In Colorado alone, 2.5 million acres of wheat are grown each year. Wheat production is almost all in a wheat-fallow system. Therefore, each year there is also a 2.5 million acres of land that produces no crop. Wheat production in eastern Colorado has averaged 75 million bushels yearly since 1980 with a total farm gate value of $215,000,000 per year. Gross returns per acre, based on the wheat-fallow system, is about $47 per acre per year.

Preliminary research results of USDA-ARS and Colorado State University scientists project that adoption of new crop production systems could increase farm gate income 2.5 times in eastern Colorado. Extended rotations with fewer summer fallow periods will permit production of more crops per unit time and a wider diversity of crops. Projections are that a 3 year rotation like wheat-corn-fallow would increase farm gate income $55 per acre per year compared to wheat-fallow. This means an added gross income of $27.5 million per year on the 5 million acres currently in a wheat-fallow cropping system. Adoption of a continuous cropping system is projected to increase farm gate income $96 per acre compared with wheat-fallow. This would mean $480 million per year of added income. However, because of extremely limited

moisture conditions in some years, continuous cropping may not always be possible. Additional research on flexible cropping systems, wherein soil moisture supply at seeding and expected growing season precipitation can be evaluated and risk probabilities determined is needed.

Similar economic benefits will be obtained across other wheat growing areas in the Central Great Plains.

Needed Research and Technology Transfer:

Information is lacking regarding the match or synchronization of crop production systems with particular climate and soil conditions, and best rotations for utilization of precipitation and sustainability. The ARS facilities and expertise at the USDA Central Great Plains Research station coupled with those of Colorado Agricultural Experiment station offer a unique opportunity to expand this team research effort with the specific objective of developing dryland farming systems for the Central Great Plains. Emphasis would be placed on farming systems that increase precipitation use efficiency, reduce erosion, preserve water quality and ensure economic sustainability. Specific projects include: 1) Evaluation of selected crop rotations both on station and over a range of climate-soil areas, 2) an eastern corridor to identification of alternative dryland grain and forage crops to be used in rotations, 3) evaluation of tillage needs and practices, 4) soil fertility needs of crops within rotations, 5) Water use and [illegible] of rotations, 6) soil water [illegible] crops within each rotation.

Modern agricultural research and technology transfer must address problems in a "systems mode". Dryland farmers today are challenged to choose present crop systems involving plants, animals, soil, climate, economics and technology. A viable communication effort is needed to find the research to meet necessary to research findings and to bring new knowledge into the [illegible] Central Plains in a reasonable time frame. A network approach to [illegible] information would involve on farm research demonstration, [illegible] and [illegible]. It is critical that the communication and adoption of new information to the user be achieved in rapidly as possible.

Budget:

A total of $[illegible] per year for 5 years to USDA-ARS in cooperation with CSU will be allocated as follows:

1. $[illegible] to the ARS-USDA Great Plains Research Station at Akron, Colorado, for development of alternative crops, fallow elimination, crop sequencing, fertilizer needs, weed and disease control techniques, and erosion control technology.
2. $[illegible] to the Colorado Agricultural Experiment Station through a cooperative agreement, to further develop practical, [illegible] management systems specifically designed for eastern Colorado soils and climate. Field scale experiments with cooperating farmers will be conducted to expedite the direct transfer of new technology to farmers and other components of agribusiness such as farmers, supplies of fertilizers and chemicals, and other [illegible]

agencies. Opportunities for integrating cropping systems with livestock production will be explored and range tested at Colorado State University's Eastern Colorado Range Station located near Akron, Colorado.

Potential Return on Research Investment for Colorado Farmers and Ranchers:

Assuming adoption throughout eastern Colorado of a wheat-corn-fallow rotation or a similar 3 year rotation, the investment in research ($7,840,000 over an eight year period) would lead to an increase in gross income of $1.87 billion over a five year period (based on present corn and wheat prices). If only 50% of the farmers follow our recommendations, the increase in gross income would be about $690 million over a five year period. In either instance, the return on this investment in research would be excellent. See Table 1.

TABLE 1
Returns on Research Investment

Program	Costs-8 Yrs. ($ Millions)	Returns-5 Yrs. ($ Billions)	Farm Gate Income ($ Billions)
Status Quo	-	-	1.2[1]
Planned Program			
100% Adoption[2]	7.84	1.4[3]	2.6
50% Adoption[2]	7.84	0.7	1.9

(1) Eastern Colorado wheat-fallow production system has farm gate value of $235,000 per year or about $1.2 billion for 5-year period.
(2) Adoption of recommendations by wheat growers, Eastern Colorado.
(3) Tax return on $1.4 billion at 15% is $210 million. Therefore, the 8 year research investment of $7.8 million returns to the government are over 30 fold. A 50% adoption rate would result in a 15 fold return to the government.

These benefits would be expected to accrue further over time and the return on this investment over a 20 to 25 year period would be far greater. There would also be a multiplier effect on unknown dimensions on the economy of eastern Colorado. Similar adoption rates and economic results could be expected across the Central Great Plains.

Environmental Benefits:

Large environmental benefits accompany the adoption of the new management systems. Soil erosion is decreased via the maintenance of crop residue on the soil surface. Ground water quality is enhanced by reducing the leaching of nitrates and pesticides via improved efficiency of water use by crops. Proposed crop rotations reduce the impact of weeds and ultimately reduce pesticide use for weed, insect and disease control. Finally, integration of crop/animal production systems will enhance rural revitalization.

March 12, 1990

Honorable Jamie L. Whitten
Chairman
House Subcommittee on Rural Development, Agriculture
Room 2362
Rayburn House Office Building
Washington, DC 20515

Dear Mr. Chairman:

I am writing on behalf of the Maine Aquaculture Association in hopes of convincing your subcommittee to recommend funding the five USDA Regional Aquaculture Centers at the authorized level of $7.5 million.

On a world scale, aquaculture is a growth industry. In 1985 world production of cultured fish and shellfish exceeded 10.6 million metric tons which is greater than 10% of total landings. By the year 2000, aquaculture is projected to supply 25% of total world fisheries landings (FAO). The world population is presently about 4 billion but is expected to reach 7 billion by the year 2000. Since most traditional commercial fisheries are close to or exceeding maximum sustainable yields, now is a critical time for the United States to invest in the future of aquaculture.

Aquaculture is a good investment. For example, even though the pen-reared salmon industry in New Brunswick, Canada started at the same time as Maine's, and even though New Brunswick and Maine share similar marine environments for growing salmon, New Brunswick currently produces ten times more salmon than Maine. In 1980 Canadian salmon production from the Bay of Fundy was valued at $81,000 (Cdn). By 1988 more than 30 farms produced 1,315 metric tons worth $18 million (Cdn). New Brunswick's salmon farming industry made such remarkable progress in large part because of government supported education and training, and coordinated research at both the federal and provincial levels.

(207) 563-1456
HC 64 BOX 041 • DAMARISCOTTA, MAINE 04543

Per acre, the yield and value of aquaculture production is very high. For Maine, the value of farm raised oysters, mussels and salmon grown on a relatively small area will easily exceed the value of Maine's traditional fisheries. Nine 100 acre oyster leases would produce a landed value of oysters greater than that of Maine's lobster fishery (about $40 million).

The USDA Regional Aquaculture Centers have quickly become crucial to aquaculture research and development. They provide an effective means to coordinate industry with research and extension. There is no other similar source of funds for aquaculture research which relies so much on direct industry participation for identification of research needs and which provides money for applied problems which can best be addressed regionally and over a period of several years.

The Northeast Regional Aquaculture Center Oyster Disease Project was developed because of the urgent need for help in developing disease resistant oysters after the devastation and economic loss in Maine to Maryland have experienced in the past. It is anticipated that selected lines of oysters currently tested over the last two years will be ready for distribution this year. As an oyster culturist, I am very pleased that the work of this project will play a critical role in helping the Northeast oyster industry.

American
Sheep Industry
Association

STATEMENT OF

PIERCE MILLER
AMERICAN SHEEP INDUSTRY ASSOCIATION

SUBMITTED TO THE
UNITED STATES HOUSE OF REPRESENTATIVES

APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON
RURAL DEVELOPMENT, AGRICULTURE & RELATED AGENCIES

On behalf of the American Sheep Industry Association, I wish to express our support of the Animal Damage Control Program administered by the Animal and Plant Health Inspection Service - USDA and the Administration's proposed FY 1991 budget increase of $2.2 million for that program.

The American Sheep Industry Association (ASI) is a federation of state member associations representing over 125,000 sheep and Angora goat producers in this country. The ASI was created in 1989 through the merger of the National Wool Growers Association and the American Sheep Producers Council. The history of these predecessor organizations goes back over 120 years and represents the oldest livestock commodity group in the United States.

The loss of animals to predators is one of the most limiting factors in sheep production in the United States. Historically, this problem was concentrated in federal land states where sheep are grazed on open range. Increasingly, however, problems of predator loss have migrated eastward. Today, coyote damage to sheep is found in every state. The problem is growing in some eastern states to such a degree that growth in sheep production is being severely limited. The U.S. sheep industry relies on the Animal Damage Control Program to provide some degree of stabilization and control of predators.

The sheep industry's support for animal damage control is backed up with dollars from sheep producers themselves. In many states, the program is cooperatively financed between federal, state and producer contributions. Great effort is being made to make every dollar stretch as far as possible. For a number of years, replacement of vehicles, two-way radios and other equipment has been postponed because the funds were needed in other areas to maintain levels of predator control. In spite of these efforts, we are seeing sheep losses due to predation in some areas on the increase. Also, states that have not needed a predator program in the past,

like Iowa, are now trying to find funding to support a program because of the growing problem in their states.

This helps to explain why the sheep industry was disturbed when we saw such a large amount of the FY 1990 budget increase of over $3.8 million being used for administrative overhead. In that budget, less than $1.0 million of that increase actually became available for field expenditures. At that time we questioned APHIS as to why such a large amount of the budget was going to administration. They explained, in much detail, how the budget was constructed. However, to date, we have not received an acceptable explanation of how the administrative expenditure has made the ADC program more responsive to producer needs, or why such a large administrative load is necessary on a program that should not require a great deal of bureaucracy.

The ASI supports the Administration's proposal for a $2.2 million increase in the ADC budget, with the stipulation that this budget increase be designated for field use, not for administrative overhead. This budget increase is needed at the field level to purchase new vehicles and equipment and to strengthen on-the-ground programs. We encourage Congress to see that these funds are used to strengthen the ADC program at the field level.

We appreciate this opportunity to comment.

Sincerely,

Pierce Miller, Chairman
Legislative Action Council

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Vlasic Foods, Inc	60
Washington State University	778

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